2.6.1

6.

Monthly Teaching Plan

2019-2020

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2020

B.Sc 2nd Semester

- **SOUND** : Free and forced and sustained vibration , resonance with examples. Analytical treatment of undamped, Damped and forced vibrations. Condition for amplitude at resonance, phase of forced vibrations.

- **KINETIC THEORY OF GASES** : Postulate of Kinetic theory of gases, Maxwell's law of distribution of velocities (derivation assuming constant 'a' and 'b'). Average, R.M.S and most probable velocity (derivation).

- **THERMODYNAMICS** : Heat Engine: Otto Engine : construction , working and efficiency , Diesel Engine : construction , working and efficiency. Difference between Otto engine and diesel engine.

- **LOW PRESSURE AND TEMPERATURE** : Production of low pressure: Exhaust pump and its characteristics (Exhaust pressure, degree of vacuum attainable, speed of pump). Expression for speed of pump. Diffusion pump: Principle, construction and working. Ionization gauge: Principle, construction and working.

- **RADIATION** : Radiation , Stefan's law, derivation of Stefan's law, determination of Stefan's constant.

G.S.Sc College, Belagavi
Department of Physics
Syllabus for 1st Internal Test 2020
B.Sc 4th Semester

- **INTERFERENCE:** Interference due to division of wave front: Fresnel's bi-prism. Determination of wavelength of monochromatic light. Interference due to division of amplitude: Stoke's treatment of reflection and transmission at interface. Thin Films, Conditions for maxima and minima in case of reflected light (derivation).

- **DIFFRACTION** : Comparison of Fresnel and Fraunhoffer class of diffractions. Composition of 'n' number of SHMs of same amplitude and period having their phases increasing in arithmetic progression. Diffraction at Single Slit. Plane Transmission grating and its theory. Dispersive power of grating, R.P of prism and grating (derivation). Finding the resultant amplitude and phase angle in Fraunhoffer's class.

- **POLARISATION :** Analytical treatment of circularly and elliptically polarized light. Huygens theory of double refraction, Positive and negative crystals. Retardation Plates. Quarter wave plate, half wave plate, Production and Analysis of plane, Circularly and elliptically polarized light.

- **THERMO-ELECTRICITY** : Seebeck Effect and its explanation. Variation of emf with temperature, Neutral Temperature and Temperature of inversion. Thermo-electric Series. Laws of Thermo-Electric effects. Peltier Effect–explanation. Peltier's Coefficient and thermodynamics of Peltier's Effect.

- **ELECTROMAGNETIC THEORY:** Mathematical background: gradient of scalar, divergence and curl of vector and their physical significance. Gauss Law, Stokes and Green's Theorem (without proof). Maxwell's equations: Derivation of Maxwell's equations in differential forms.

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2020

B.Sc 6th Semester **Paper I**

- **SOLID STATE PHYSICS:** Crystal lattice, Basis vectors, translation symmetry, Unit cell, co-ordinate numbers, Bravais lattice. Problems on Miller indices, expression for inter planner spacing.
- **Free electron Theory:** Classical free electron model, expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory.
- **Semiconductors :** Expression for electrical conductivity in intrinsic semiconductor.
- **NUCLEAR PHYSICS :** Liquid drop model- Explanation of semi empirical mass formula, Shell model . Nuclear instruments: GM Counter, Scintillation counter, Linear accelerator and Cyclotron. Problems.

PAPER II

- **INTEGRAL TRANSFORMS** :. Fourier transform: Definition, Fourier integral, inverse transform, Fourier transform of derivatives, convolution (Mathematical Statement only),Parseval's theorem

  Laplace transform: Definition, transform of elementary functions, inverse transform.
- **OPTOELECTRONICS :** Optical fibre: Introduction to optics, Basics, reflection, laws of reflection, refraction, laws of refraction, refractive index, Total internal reflection, conditions for TIR. Optical fibre system structure, propogation of light through an optical fibre. Acceptance angle, acceptance cone, Numerical aperature and derivation for that. Fractional refractive index change, relation between NA, acceptance angle and fractional R.I change. Types of Optical fibers(Single mode, Multi-mode),Grading, Coherent bundle, Transmission loss, Attenuation and Distortion. Problems.
- **COMMUNICATION :** Modulation and Demodulation: Need for Modulation, Types of modulation, AM modulation, Block diagram of AM Transmitter, Signification of modulation factor, Frequency spectrum of AM and FM, Comparison of FM with AM.
- **ELECTRONIC :** Non – Sinusoidal Oscillators – Multivibrators – Types of multivibrators, Uses of multivibrators. Explanation of astable, monostable and bistable multivibrators.

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

II SEM, February 2020

Date: 1-2-2020

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOUND** Condition for amplitude at resonance, phase of forced vibrations, effect of damping onphase of forced vibrations, effect of damping on phase of forced vibrations.Theory of Helmholtz Resonator and determination of unknow frequency.
II	BMP	**KINETIC THEORY OF GASES** Maxwell's law of distribution of velocities (derivation assuming constants a and b). Mean free path, derivation of Clausius expression and Maxwell's expression.
III.	CBD	**THERMODYNAMICS** Carnot's Theorem. Entropy: Concept of entropy. Change in entropy in reversible and irreversible processes.
IV	SSK	**LOW PRESSURE AND TEMPERATURE** 1. Diffusion pump: Principle, construction and working 2. 2. Ionization gauge
V	BMT	**RADIATION** Energy distribution in the Black body spectrum. Wein's displacement law and Rayleigh – Jean's Law (qualitative).

Head

Department of Physics

IQAC Co-ordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

IV-SEM FEBRUARY 2020

Date: 1-2-2020

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	SGK	**INTERFERENCE** Thin Films, Conditions for maxima and minima in case of reflected light (derivation). Multiple reflections. Mention of conditions for maxima and minima in case of transmitted light. Theory of Newton's Rings (derivation).
II	RSK	**DIFFRACTION** Dispersive power of grating. Resolving power of prism and grating(derivation) Fresnel's class: Fresnel's theory of half period zones considering plane waves.
III	ABK	**POLARISATION:** 1. Quarter wave plate. Half wave plate. Production and Analysis of plane, Circularly and elliptically polarized light.
IV	LSL	**THERMO-ELECTRICITY:** Peltier Effect –explanation. Peltier's Coefficient and thermodynamics of Peltier's Effect. Thomson Effect explanation. Thomson Coefficient. Derivation of the relation $\pi = -T\, dE/dT$ and $\sigma_2 - \sigma_1 = T\, d^2E/dT^2$
V	PSP	**ELECTROMAGNETIC THEORY:** Maxwell's equations: Derivation of Maxwell's equations in differential forms. Mention of integral forms and their physical significance. Derivation of general Plane Wave equations in free space. Transverse nature of radiation. Poynting theorem (derivation).

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-I, DEC-JAN 2019-2020

Date: 1-1-2020

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**SOLID STATE PHYSICS** Crystal structure : Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, Coordination numbers, Bravais lattices, Seven crystal system, Miller indices, Expression for inter planner spacing, Crystal structure of NaCl and KCl
II	PSP	**Free electron Theory**: Classical free electron model, expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory. Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors,experimental determination of energy gap.
III	SVK	**Nuclear Models**: Liquid drop model- Explanation of semi empirical mass formula, Explanation of nuclear fission on the basis of liquid drop model, Shell model (qualitative) and Magic numbers.

VI- SEM PAPER-II

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	ABK	**INTEGRAL TRANSFORMS:** Fourier transform: Definition, Fourier integral, inverse transform, Fourier transform of derivatives, convolution (Mathematical Statement only),Parseval's theorem(Statement only). Application
II	AUN	**OPTOELECTRONICS:** Optical fibre: Introduction to optics, Basics, reflection, laws of reflection, refraction, laws of refraction, refractive index, Total internal reflection, conditions for TIR. Optical fibre system structure, propogation of light through an optical fibre. Acceptance angle, acceptance cone, Numerical aperature and derivation for that. Fractional refractive index change, relation between NA, acceptance angle and fractional R.I change. Problems
III	SSK	**COMMUNICATION** Modulation and Demodulation: Need for Modulation, Types of modulation, AM modulation, Block diagram of AM Transmitter.

SMS

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, OCTOBER 2019

Date: 1-10-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SHM and Linear Momentum :** Portion completed
II	SSK	**Angular Momentum for system of Particles and Conservation of energy and elements of satellite motions:** Problems
III	BMP	**Rigid Body Dynamics:** Experimental determination of Moment of inertia of fly wheel with relevant theory.
IV	CBD	**Elasticity:** Portion completed.
V	BMT	**Surface Tension and Viscosity:** Problems.

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, OCTOBER 2019 Date: 1-10-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
II	LSL	Derivation from Lagranges equation of motion.
II	KPG	**Nano Physics:** Length scales, Variation of physical properties from bulk to thin films to thin films to nanomaterials,- confinement of electron energy states in0D, 1D, 2D and 3D systems(qualitative treatment). Surface, size, shape and assembly effects. Graphene and fullerene. Chemical Routes for Synthesis of Nanomaterials, Solvothermal and Sol-gel synthesis. Problems
IV	SVK	**Analog Electronics: Power Supply** Zener diode: Characteristic parameter, Explanation of Zener Breakdown. Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier. Problems.
V	PSP	**Transistor:** FET – Types, characteristics and parameters. FET as a common source amplifier (Qualitative).Problems

PAPER – II

II	ABK	**Wave Mechanics:** Concept of degeneracy. Problems
IV	SSK	**Molecular Spectra** Application of Molecular spectra, Energy of Diatomic molecule as a non rigid rotator (Qualitative).
I/V	AUN	**Laser** Stimulated Absorption and Emission, Einstein A and B coefficients. Conditions for LASER action, Gas LASERs He-Ne, Diode LASERs, Characters and applications of laser. Problems
IV	KPG	Raman Effect: Raman Scattering. Experimental set up. Raman Spectrum. Experimental set up for Raman effect. Raman Spectrum, Explanation of Raman effect on the basis of quantum theory. Application of Raman Effect Problems

Head

Department of Physics

G.S.Sc College, Belagavi
Department of Physics
Syllabus for 2nd Internal Test 2019-20
B.Sc1st Semester

- **Linear Momentum**: Concept of frames of reference. Laws of conservation of Linear Momentum for a system of particles. Elastic Collision between two particles in Laboratory and Center of Mass frames of references. Inelastic collision between two particles in Laboratory and Centre of Mass frames of references (without derivation)
- **Viscosity:** Introduction to viscosity, streamline and turbulent flow. Derivation of Poiseuelli's formula for the flow of viscous fluid through a narrow tube. Motion of a body in a viscous medium Stoke's law with derivation and expression for terminal velocity example: velocity of rain drop.
- **Conservation of Energy And Elements of Satellite Motion:** Conservation of energy as a basic principle including mass-energy (qualitative). Simple harmonic oscillations of a Light Spiral Spring (illustration with derivation) Derivation of velocity (orbital velocity and escape velocity) in closed and open orbit in central field, Escape velocity of a Satellite: Stationary satellites, weightlessness. Problems
- **Elasticity**: Poisson's Ratio, bending of beams, expression for bending ratio, expression for bending moment (derivation). Theory of Light cantilever and loaded at the free end and at the center.Problems
- **Rigid Body Dynamics**: Derivation of expression for moment of inertia of Rectangular lamina, Circular disc. Qualitative discussion on Moment of Inertia of Annular ring. Qualitative discussion on Moment of Inertia of hollow and solid cylinders.

G.S.Sc College, Belagavi
Department of Physics
Syllabus for 2nd Internal Test 2019-20
B.Sc. 3rd Semester

- **Dielectrics:** Expression for mechanical stress on surface of charged conductor. Application to electrified soap bubble. Expression for electrostatic energy in a medium surrounding charged conductor. Derivation of Clausius–Mosotti equation and its limitations. Experimental determination of dielectric constant of a solid by Hofkinsons's Null Method. Problems.
- **Cardinal Point**: Cardinal points of optical systems: Principal foci, principal points and nodal points. Newton's formula and graphical construction of image. Equivalent focal length of two thin lenses separated by a distance (derivation) and location of Cardinal Points. Thick lens and power of thick lens.
- **Transient Current:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit. Time constant of RL and RC circuits.
- **Dynamics of Charged Particles:** Problems.
  Aberration: Spherical (longitudinal and lateral), and chromatic (longitudinal and lateral), aberrations. Methods to reduce spherical aberration (qualitative).
- **Electrical Instruments and Measurements:** Determination of self-inductance (L) by Rayleigh's method with necessary theory. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase.

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 2nd Internal Test 2019-20

B.Sc 5th Semester Paper-2

- **WAVE MECHANICS**: Time independent Schrodinger's wave equation (derivation). Physical significance of wave function. Derivation of expression for energy of particle in a box. Eigen function and Eigen values. Linear harmonic oscillator with energy expression (derivation). Concept of zero point energy and degeneracy. Problems.
- **Atomic Spectra:** Larmor precession. Normal Zeeman effect- explanation set up Quantum theory of normal Zeeman Effect. Energy level diagram for sodium D lines. Anomalous Zeeman effect (qualitative).

  Molecular Spectra: Spectra of diatomic molecules: Nature of Molecular spectrum, Different types of energies of a molecule, Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule. Application of Molecular spectra, Energy of a Diatomic molecules as a non-rigid rotaror (Qualitative).

- **Mathematical Physics:** **Bessel functions**: Bessel diferential equation, Expression for Bessel polynomial, Bessel recursion relations.
  Hermite functions: Hermite differential equation, Expression for Hermite polynomial, finding the values of Hermite polynomial, Expression for Hermit generating function, Hermite recursion relation.

SWS

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 2nd Internal Test 2019-20

B.Sc 5th Semester Paper-1

- **Classical Mechanics:** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion.
  a. Motion of a Single Particle in Cartesian Co-ordinates.
  b. Simple pendulum

- **Relativity:** Michelson – Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations equations (Derivation). Relativity of Length and Time. Law of Addition of Velocities. Variation of Mass with Velocity. Mass Energy Relation. Problems

- **Transistors:** h-parameters of a transistor and their determination using CE configuration. transistor as CE amplifier with frequency response. Types of feedback, transfer gain with feedback (derivation).Oscillators-Transistor as an oscillator, comparison between amplifier and oscillator, Classification of oscillators-damped and undamped oscillators, the oscillatory circuit, frequency of oscillatory current, essentials of a feedback LC oscillator

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, SEPTEMBER 2019

Date: 1-9-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**Linear Momentum** Inelastic collision between two particles in Laboratory and center of Mass frames of reference (without derivation), Conservation of Linear Momentum in case of variable mass. Derivation of equation of motion for Single Stage Rocket. Problems
II	SSK	**Angular Momentum** Conservation of energy as a basic principle including mass-energy (qualitative)Simple harmonic oscillations of a Light Spiral Spring (illustration with derivation)
III	BMP	**Rigid Body Dynamics** Qualitative discussion on Moment of Inertia of hollow and solid cylinders. Theory of bar pendulum and compound pendulum. Problems
IV	CBD	**Elasticity** Loaded at the free end and at the center. Expression for couple per unit twist, torsional pendulum. Problems
V	BMT	**Viscosity** Derivation of Poiseuelli's formula for the flow of viscous fluid through a narrow tube. Motion of a body in a viscous medium – Stoke's law with derivation and expression for terminal velocity example: velocity of rain drop.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM SEPTEMBER 2019

Date: 1-9-2019

UNIT	FACULTY	SYLLABUS TO BE COVRERED
I	PSP	**CARDINAL POINTS:** Location of Cardinal Points. Thick lens and power of thick lens. Problems.
II	SGK	**ABERRATIONS:** Methods to reduce spherical aberration (qualitative) condition for Achromatism of two thin lenses in contact and separated by a distance. Ramsden's and Huygen's eye-pieces: Construction and location of cardinal points. Problems
III	ABK	**DIELECTRICS:** Experimental determination of dielectric constant of a solid by Hopkinsons's Null Method. Problems.
IV	RSK	**TRANSIENT CIRCUITS:** Discharging of capacitor through RC circuit. Time constant of RL and RC circuits. LCR circuit (Discussion of special cases). Measurement of high resistance by leakage method. Problems.
V	LSL	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Theory of earth inductor. Determination of B_H, B_V and Φ.Use of CRO in the measurement of Voltage, Frequency and Phase. Problems.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, September 2019 Date: 1-9-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
II	LSL	Reduction of two body problem to equivalent one body problem. Expression for total energy, equation of orbit (equivalent of single body) and Classification of Orbits. Kepler's Law of Planetary Motion and their derivation from Lagranges equation of motion.
III/IV	SVK	**RELATIVITY** Mass Energy Relation Problems **POWER SUPPLY** Unregulated bridge rectifier (efficiency, ripple factor, PIV, TUF and voltage regulation-qualitatively) Filters: capacitor filter,LC filter, section filter(study of wave forms qualitatively).
V	PSP	**TRANSISTOR** Types of feedback, transfer gain with feedback (derivation). Oscillators-Transistor as an oscillator, comparison between amplifier and oscillator, Classification of oscillators-damped and undamped oscillators, the oscillatory circuit, frequency of oscillatory current, essentials of a feedback LC oscillator. Hartely and Phase shift oscillators.

V-SEM PAPER-II, September 2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
II	ABK	**WAVE MECHANICS:** Derivation of expression for energy of particle in a box. Eigen function and Eigen values. Linear harmonic oscillator with energy expression (derivation). Concept of zero point energy and degeneracy. Problems.
III/IV	SSK	**ATOMIC SPECTRA** Energy level diagram for sodium D lines. Anomalous Zeeman effect **MOLECULAR SPECTRA** Spectra of diatomic molecules: Nature of Molecular spectrum, Different types of energies of a molecule, Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule.
V	AUN	**MATHEMATICAL PHYSICS** Orthogonality. Hermite functions. Hermite polynomials, generating functions, recursion relations, orthogonality. Problems.

Head

Department of Physics

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019-2020

B.Sc 1st Semester

- **Simple Harmonic Motion**: Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation), Composition of two rectangular SHM's having same periods, Lissajous figures. Problems.

- **Surface Tension**: Introduction to surface tension, derivations for Pressure difference across a curved liquid surface and Expression for rise of liquid in a capillary tube.

- **Angular Momentum**: Angular momentum of a single particle, system of particles, Torque, Law of conservation of angular momentum, central force, Kepler's second law (derivation). Escape velocity of a satellite.

- **Elasticity**: Elasticity, Stress and types of stress, Strain and types of strain, Hooke's law, Modulus of elasticity and its types. Work done per unit volume in a strain (Elongation strain, volume strain, shearing strain) Relation between Young's modulus, Bulk modulus and modulus of rigidity. Problems on relation between 'q', 'k','η'.

- **Rigid Body Dynamics**: Moment of inertia and its physical significance. Derivation for theorems of moment of inertia. (Parallel and Perpendicular Axes Theorems). Derivation of expression moment of inertia of a thin uniform rod.

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019-2020

B.Sc. 3rd Semester

- **Dielectrics:** Electric polarization. Gauss law (vector form) in dielectrics and electric displacement. Boundary conditions at a surface separating two dielectric media (derivation). Relation between Electric Displacement (D), Electric field (E), Polarization (P). Atomic Polarizability, electric susceptibility, relation between electric constant and electric susceptibility.

- **Geometrical Optics:** Fermat's principle-statement and explanation, derivation of laws of reflection and refraction. Abbe's sine rule (derivation), Lagrange and Helmholtz's relation (derivation).

- **Current Electricity:** Statement of Biot-Savart law. Derivation of expression for magnetic field due to a straight conductor and axis of circular coil carrying current (both derivation), Helmholtz galvanometer- principle, construction and working + problems.

- **Dynamics of charged particles:** Charged particles in a uniform (static) electric field applied along the direction of particle motion. Energy acquired during the motion of charged particle in uniform transverse electric field. Charged particles moving in a constant uniform magnetic field.

- **Electrical Instruments and Measurements:** Ballistic galvanometer, Theory of BG, Condition for a moving coil galvanometer to be ballistic and dead beat, charge sensitivity, current sensitivity and their relation, Numerical problems,Damping correction.

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019-2020

B.Sc 5th Semester Paper-1

Classical Mechanics: Constraints, Types of constraints with example, Generalized Co-ordinates, derivations for generalized displacement, velocity, force and kinetic energy. Principle of Virtual Work, D'Alembert's principle.

Relativity: Michelson Morley Experiment. Postulates Special Theory of Relativity. Lorentz Transformation Equations, Relativity of length and time + Problems.

Network Theorems: Current and voltage sources, Superposition theorem Thevenin's theorems and Norton's theorems, Maximum power transfer theorem, + Problems.

Paper-2

Quantum Mechanics: Compton scattering-(qualitative),Devission & Germer Experiment, De-Broglie Hypothesis. G.P.Thomson experiment, Uncertainty principle Statement, Illustration by Gamma – Ray Microscope.

Atomic Spectra: Atomic models, salient features of vector atom model. Vector atom model-electron spin and quantization and quantum number associated with vector atom model, l-s & j-j coupling. magnetic dipole moment of electron due to orbital and spin motion. Total angular momentum, Lande's 'g' factor.

Mathematical Physics: Legendre Polynomials, Rodrigue's Formula, Generating Function, Recursion Relations, Orthogonality + Problems

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, August 2019

Date: 1-8-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SHM:** Composition ofwo rectangular SHM's having same periods, Lissajous figures.Problems **Linear Momentum:** Concept of frames of reference. Laws of conservation of Linear Momentum for a System of particles. Elastic Collision between two particles in Laboratory and Center of Mass frames of references.
II	SSK	**Angular Momentum For System of Particles:** Spin,orbital and Total Angular Momentum. **Conservation of Energy and Elements of Satellite Motion:**Conservation of energy. Derivation of velocity (orbital velocity and escape velocity) in closed and Open orbit in a central field, Escape velocity of a satellite: stationary satellites, weightlessness. Problems.
III.	BMP	**Rigid body dynamics:** Derivation of expression for moment of Inertia of Rectangular lamina, Thin Uniform rod, Circular disc. Qualitative discussion on Moment of Inertia of Annular ring.
IV	CBD	**Elasticity:** Bending of beams, expression for bending ratio, expression for bending moment (derivation). Theory of Light cantilever
V	BMT	**Surface Tension:** Effect of temperature and impurity on surface tension. Example. Problems **Viscosity:** Introduction to viscosity, streamline and turbulent flow.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM AUGUST 2019

Date: 01/08/19

UNIT	FACULTY	SYLLABUS TO BE COVRERED
I	PSP	**CARDINAL POINTS** Cardinal points of optical system: Principal foci, principal points and nodal points. Newton's formula and graphical construction of image. Equivalent focal length of two thin lenses separated by a distance (derivation) and location of Cardinal Points. Thick lens and power of thick lens.
II	SGK	**DYNAMICS OF CHARGED PARTICLES** Problems. **ABERRATIONS** Spherical (longitudinal and lateral) and chromatic (longitudinal and lateral) aberrations.
III	ABK	**DIELECTRICS** Expression for mechanical stress on surface of charged conductor. Application to electrified soap bubble. Expression for electrostatic energy in a medium surrounding charged conductor. Derivation of Clausius–Mosotti equation and its limitations.
IV	RSK	**TRANSIENT CURRENTS** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit. Time constant of RL and RC circuits. LCR circuit (Discussion of special cases). Measurement of high resistance by leakage method. Problems.
V	LSL	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS** Determination of self-inductance (L) by Rayleigh's method with necessary theory. Theory of earth inductor. Determination of BH, BV and Φ. CRO block diagram.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, August 2019

Date: 1-8-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I/II	LSL	**CLASSICAL MECHANICS** Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion. a. Motion of a Single Particle in Cartesian Co-ordinates. b. Harmonic Oscillator. Problems Reduction of two body problem to equivalent one body problem
II	SVK	**RELATIVITY** Law of Addition of Velocities. Variation of Mass with Velocity.
III	PSP	**TRANSISTOR** h-parameters of a transistor and their determination using CE configuration transistor as CE amplifier with frequency response .Types of feedback, transfer gain with feedback (derivation). Oscillators-Transistor as an oscillator, comparison between amplifier and oscillator. Classification of oscillators-damped and undamped oscillators. the oscillatory circuit, frequency of oscillatory current. essentials of a feedback LC oscillator.

V-SEM PAPER-II, August 2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
II	ABK	**WAVE MECHANICS:** Time independent Schrodinger's wave equation (derivation). Physical significance of wave function
III	SSK	**ATOMIC SPECTRA** Magnetic moment of electron due to orbital motion. Lande's g_factor. Larmor precession. Normal Zeeman effect- explanation set up Quantum theory of normal Zeeman effect.
V	AUN	**MATHEMATICAL PHYSICS** Orthogonality and normalization,associated Legendre functions ,spherical harmonics. Problems **Bessel functions:** Bessel functions of first kind, recursion relations.

SMS

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, JULY 2019-20

Date: 01- 07 -2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SHM** Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation).
II	SSK	**ANGUALAR MOMENTUM FOR SYSTEM OF PARTICLES:** Conservation of angular momentum, central force. Kepler's Second Law (derivation).
III.	BMP	**RIGID BODY DYNAMICS** Moment of inertia and its physical significance. Derivation for theorems of moment of inertia.
IV	CBD	**ELASTICITY** Moduli of elasticity of isotropic materials and relation between three moduli of elasticity (derivation). Poisson's Ratio, bending of beams.
V	BMT	**SURFACE TENSION** Expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method with relevant theory.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, July 2019-20

Date: 01-07-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**CLASSICAL MECHANICS** Degrees of Freedom, Configuration Space, Principle of Virtual Work, Generalized Co-ordinates, Virtual displacement, Velocity, Force, Kinetic and Potential Energies(derivation). D'Alembert's Principle.
III	SVK	**RELATIVITY** Lorentz Transformations equations (Derivation). Relativity of Length and Time.
V	PSP	**NETWORK THEOREMS** Superposition theorem, Thevinin's and Norton's Theorem Maximum power transfer Theorem (Derivation for all theorems).

V-SEM PAPER-II, July 2019-20

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	ABK	**QUANTUM MECHANICS** G.P.Thomson experiment, Uncertainty principle Statement, Illustration by Gamma – Ray Microscope.
III	SSK	**ATOMIC SPECTRA** Stern Gerlach experiments. Coupling scheme for single valance and two valance system. Magnetic field effect on light.
V	AUN	**MATHEMATICAL PHYSICS** Generating functions and recursion relations. Problems

SUS

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM JULY 2019-20

Date: 1-7-2019

UNIT	FACULTY	SYLLABUS TO BE COVRERED
I	PSP	**GEOMETRICAL OPTICS** Derivation of laws of reflection and refraction. Abbe's sine rule (derivation). Lagrange and Helmholtz's relation (derivation). Problems.
II	SGK	**DYNAMICS OF CHARGED PARTICLES** Energy acquired during the motion of charged particle in uniform transverse electric field. Charged particles moving in a constant uniform magnetic field. Problems
III	ABK	**DIELECTRICS** Boundary conditions at a surface separating two dielectric media (derivation). Relation between Electric Displacement (D), Electric field(D), Polarization(P) Atomic Polarizability, electric susceptibility, relation between electric constant and electric susceptibility.
IV	RSK	**CURRENT ELECTRICITY** Mention of expression of variation of magnetic field along the axis of a circular coil and determination of BH. Helmholtz Galvanometer: Principle, Construction and Working. Problems. **TRANSIENT CURRENTS** Theory of growth and decay of current through RL circuit.
V	LSL	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS** Condition for moving coil galvanometer to be ballistic And dead beat. Theory of BG. Charge Sensitivity volt sensitivity and current sensitivity and their relations.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, JUNE 2019-20 **Date; 17/6/19**

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SHM** Introduction to SHM
II	SSK	**Angular momentum for system of particles:** Introduction, Angular momentum and torque.
III.	BMP	**Rigid body dynamics** Introduction to rigid body dynamics.
IV	CBD	**Elasticity** Introduction to elasticity
V	BMT	**Surface tension** Introduction to surface tension, derivations for Pressure difference across a curved liquid surface

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM JUNE 2019-20

Date: 17-6-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	PSP	**GEOMETRICAL OPTICS** Fermat's principle-statement and explanation
II	SGK	**DYNAMICS OF CHARGED PARTICLES** Charged particles in a uniform (static) electric field applied along the direction of particle motion
III	ABK	**DIELECTRICS** Electric polarization. Gauss law (vector form) in dielectrics and electric displacement
IV	RSK	**CURRENT ELECTRICITY** Statement of Biot – Savart's Law, Derivation of expression for magnetic field due to a straight conductor carrying current.
V	LSL	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Introduction to moving coil Ballistic galvanometer

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V -SEM PAPER-I, JUNE 2019-20

Date: 17-6-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**CLASSICAL MECHANICS** Constraints: Types with example
III	SVK	**RELATIVITY** Michelson – Morley Experiment. Postulates of Special Theory of Relativity.
III	PSP	**NETWORK THEOREMS:** Current and voltage sources

V -SEM PAPER-II, JUNE 2019-20

I	ABK	**QUANTUM MECHANICS** Compton effect- (qualitatively). Devission and Germer Experiment. de – Broglie Hypothesis
II	SSK	**ATOMIC SPECTRA** Vector atom model-electron spin and quantization and quantum numbers.
III	AUN	**MATHEMATICAL PHYSICS** Legender functions: Lengender polynomials. Rodrigue's formula. Problems

SWS

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2018-2019

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

II SEM, MARCH2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOUND** Transducers and their characteristics: Pressure microphone (Carbon), moving coil loud speaker. Problems.
II	BMP	**KINETIC THEORY OF GASES** Mean free path, derivation of Clausius expression and Maxwell's expression. Brownian Motion and derivation of Einstein's equation for translational Brownian motion. Problems
III	CBD	**THERMODYNAMICS** Maxwell's Relations: Derivation of Maxwell's Relations. Applications to Clausius – Clapeyron's equation. Problems
IV	SSK	**LOW PRESSURE AND TEMPERATURE** Porous plug experiment with analytical treatment concept of is version temperature. Problems
V	BMT	**RADIATION** Planck's law and its derivation. Derivation of Wein's Displacement law and Rayleigh Jean law from Planck's law Problems.

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G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

IV SEM, MARCH -2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	SGK	**INTERFERENCE** Multiple reflections, Mention of conditions for maxima and minima in case of transmitted light. Theory of Newton's Rings (derivation), Michelson's Interferometer: Construction and working, Formation of circular and straight fringes (qualitative), Determination of wavelength of monochromatic light.
II	RSK	**DIFFRACTION** Fraunhoffer class: Comparison of Fresnel and Fraunhoffer class of diffractions. Composition of 'n' number of SHMs of same amplitude and period having their phases increasing in arithmetic progression. Diffraction at Single Slit. Plane Transmission grating and its theory, dispersive power of grating. Resolving power of prism and grating (derivation).Problems
III	SVK	**POLARISATION** Optical activity: Fresnel's theory of rotatory polarization (qualitative), Laurent's half shade polarimeter, optical activity, specific rotation. Problems ALTERNATING CURRENT LCR parallel circuit-Expression for admittance and condition for resonance (using 'operator' j 'method'). Problem,
IV	LSL	**THERMO-ELECTRICITY** Thermo-Electric (Tait) diagrams, its applications to determine, 1. Total emf, 2. Peltier emf, 3. Thomson emf 4. Neutral temperature and 5. Temperature of inversion. Problems
V	PSP	**ALTERNATING CURRENT** Operator 'j'. Argand diagram. LCR series circuit. Expiration for current, impedance and phase (using 'j' operator method). Condition for resonance frequency, band width, quality factor and their relation (qualitative).

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G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI – SEM Paper – I MARCH - 2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I/ V	LSL	**SOLID STATE PHYSICS** Specific heats of solids: Classical theory, Einstein's and Debye's theory of specific heats. **DIGITAL ELECTRONICS** Number System-Decimal, Binary, Hexadecimal and their inter conversion Boolean algebra, Truth tables, De Morgan's theorems. Designing of logic Gates using NAND and NOR Gates.
II	PSP	**ENERGY SOURCES** Introduction, Convention and nonconventional energy sources, Advantages of Solar energy, Solar radiation at Earth's surface, Solar radiation geometry- altitude angle, Zenith angle solar azimuthal angle, surface azimuthal angle Solar radiation measurement, Angstrom compensation Pyrhilometer, and Pyronometer.
III	SVK	**NUCLEAR PHYSICS** Alpha rays: Theory of a decay, Range , Ionization , specific ionization and Geiger – Nuttal relation. Beta decay: Continuous beta spectrum, and Neutrino Hypothesis.

VI - SEM Paper – II

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	BMT	**INTEGRAL TRANSFORMS** Transform of derivations, differentiation and integration of transforms, solutions of differential equations. Difference between Laplace and Fourier transform. Problems
IV	BMI/CDD	**COMPUTER PROGRAMMING** Computer programming Preliminaries, Algorithms, flowcharts and their symbols, Simple flow chart examples. **Study of C-language:** Basic structure of C-Programming , tokens, keywords and identifiers, constants, variables, data types, decision control statement ,operators and expressions , loop control statements, decision making IF-ELSE statement for looping, case control statements. Problems
III	AUN	**COMMUNICATION** Demodulation: Necessity, AM detection, Square law detector. Block diagram of Super heterodyne receiver.
V/III	SSK	**ELECTRONICS** Virtual ground and summing point. Op-Amp applications as phase shift and Wien bridge oscillator. Problems **COMMUNICATION** Classification of radio waves, Types of waves, propagation of radio waves through ionosphere (Qualitative), Critical frequency, Critical angle, Virtual height, Secant law. Modulation and Demodulation: Need for Modulation, Types of modulation, AM modulation, Block diagram of AM Transmitter, Significance of modulation factor, Frequency spectrum of AM and FM., Comparison of FM with AM

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G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

II SEM, FEB 2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOUND** Condition for amplitude at resonance, phase of forced vibrations, effect of damping on phase of forced vibrations, effect on damping on phase of forced vibrations. Theory of Helmholtz Resonator and determination of unknown frequency.
II	BMP	**KINETIC THEORY OF GASES** Average, r.m.s and most probable velocity (derivation). Mean free path, derivation of Clausius expression
III	CBD	**THERMODYNAMICS** Carnot's Theorem. Entropy: Concept of entropy, change in entropy in reversible and irreversible processes. Entropy – Temperature diagram, Second law of thermodynamics.
IV	SSK	**LOW PRESSURE AND TEMPERATURE** Diffusion pump : Working 2. Ionization gauge: Principle, construction and working. Production of low temperature: Joules Thomson effect, porous plug experiment
V	BMT	**RADIATION** Energy distribution in the Black body spectrum. Wein's displacement law and Rayleigh – Jean's Law (qualitative)

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G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

IV SEM, FEB-2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	SGK	**INTERFERENCE** Interference due to division of amplitude: Stokes' treatment of reflection and Transmission at interface. Thin Films, Conditions for maxima and minima in case of reflected light (derivation).
II	RSK	**DIFFRACTION** Fraunhoffer class: Comparison of Fresnel and Fraunhoffer class of diffractions. Composition of 'n' number of SHMs of same amplitude and period having their phases increasing in arithmetic progression. Diffraction at Single Slit. Plane Transmission grating and its theory.
III	SVK	**POLARISATION** Quarter wave plate, Half wave plate, Production and Analysis of plane, Circularly and elliptically polarized light.
IV	LSI	**THERMO-ELECTRICITY** Peltier Effect – explanation. Peltier's Coefficient and thermodynamics of Peltier's Effect. Thomson effect explanation. Thomson Coefficient. Derivation of the relation $\pi = -T\, dE/dT$ and $\sigma_a - \sigma_b = -T\, d^2e/dT^2$
V	PSP	**ELECTROMAGNETIC THEORY** Maxwell's equations: Derivation of Maxwell's equations in differential forms. Mention of integral forms and their physical significance. Derivation of general Plane Wave equations in free space. Transverse nature of radiation. Poynting theorem (derivation)

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G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI – SEM Paper – I FEB - 2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**SOLID STATE PHYSICS** Crystal structure of NaCl and KCl .Crystal diffraction: X-Ray diffraction. Bragg's law, Bragg's X-ray spectrometer powder crystal method
II	PSP	**SEMICONDUCTORS** Experimental determination of energy gap, Hall Effect, expression for Hall coefficient and applications.
III	SVK	**NUCLEAR PHYSICS** Nuclear instruments: GM Counter, Scintillation counter, Linear accelerator and Cyclotron. Problems.

VI - SEM Paper – II

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	BMT	**INTEGRAL TRANSFORMS** Convolution (Mathematical Statement only), Parseval's theorem (Statement only), Applications. Laplace transform: Definition, transform of elementary functions, Inverse transforms.
II	AUN	**OPTOELECTRONICS** Introduction, Light Emitting Diodes, Photo Diodes, Laser Diodes (Pin, Avalanche diodes) Opto-coupler. Problems.
III	SSK	**ELECTRONICS** Non – Sinusoidal Oscillators – Multivibrator – types of Multivibrator, Uses of Multivibrator. Explanation of astable, monostable and bistable Multivibrators Op-Amp – Op-Amp symbol and polarity convention. Ideal op – Amp, Op-Amp as a inverter and non inverter.

Head

Department of Physics

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019

B.Sc 2nd Semester

- **SOUND:** Introduction-types of vibrations. Free and forced vibrations, resonance with examples. Analytical treatment of undamped, Damped and forced vibrations.
- **KINETIC THEORY OF GASES:** Introduction-Postulates of kinetic theory of gases, Maxwell's law of distribution of velocities (derivation assuming constants a and b).
- **THERMODYNAMICS:** Heat engines: Otto Engine, Otto Cycle, expression for efficiency. Diesel engine: Diesel cycle, expression for efficiency. Carnot's Theorem. Entropy: Concept of entropy, change in entropy
- **LOW PRESSURE AND TEMPERATURE:** Introduction- Production of low pressure: Exhaust pump and its characteristics (Exhaust pressure, degree of vacuum attainable, speed of pump). Diffusion pump: Principle, construction and working.
- **RADIATION:** Radiation pressure (qualitative), Stefan's Law and its derivation using radiation pressure. Determination of Stefan's constant.

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019

B.Sc. 4th Semester

- **INTERFERENCE**: Interference due to division of wave front: Fresnel's bi-prism- Determination of wavelength of monochromatic light
- **DIFFRACTION**: Fresnel's class: Fresnel's theory of half-period zones considering plane waves. Rectilinear propagation of light. Zone plate: Construction, theory, expression for focal length. Problems.
- **POLARISATION**: Analytical treatment of circularly and elliptically polarized light. Huygens theory of double refraction, Positive and negative crystals. Retardation Plates. Quarter wave plate, half wave plate.
- **THERMO-ELECTRICITY**: Seebeck Effect and its explanation. Variation of emf with temperature, Neutral Temperature and Temperature of inversion. Thermo-electric Series. Laws of Thermo-Electric effects.
- **ELECTROMAGNETIC THEORY**: Mathematical background: gradient of scalar, divergence and curl of vector and their physical significance. Gauss Law, Stokes' and Green's Theorem (without proof). Maxwell's equations: Derivation of Maxwell's equations in differential forms.

SWS

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2019

B.Sc 6th Semester Paper-1

- **SOLID STATE PHYSICS**: Crystal structure : Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, Coordination numbers, Bravais lattices, Seven crystal system, Miller Indices, Expression for inter planner spacing.
- **FREE ELECTRON THEORY**: Classical free electron model, expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory.

  Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors
- **NUCLEAR MODELS**: Liquid drop model- Explanation of semi empirical mass formula, Explanation of nuclear fission on the basis of liquid drop model, Shell model (qualitative) and Magic numbers.

  Nuclear instruments: Linear accelerator and Cyclotron.

Paper-2

- **INTEGRAL TRANSFORMS**: Fourier series, Fourier Coefficient, Fourier Integral, Fourier transform and inverse transform properties
- **OPTOELECTRONICS**: Optical fiber: Introduction, Types of Optical fibers (Single mode, Multi-mode), Grading, Numerical aperture (derivation), Coherent bundle, Transmission loss, Attenuation and Distortion, Fiber Optical communication system (Block diagram with each block explanation). Problems.
- **ELECTRONICS**: Integrated Circuits – Timer IC – 555 & 7400 – block diagram and explanation of pin configuration. Uses of timer IC in different cases. Generation of rectangular and square wave using time IC.

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

II SEM, DEC- JAN 2018-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOUND** Introduction-types of vibrations. Free and forced vibrations, resonance with examples. Analytical treatment of undamped and Damped vibrations.
II	BMP	**KINETIC THEORY OF GASES** Introduction-Postulates of kinetic theory of gases, Maxwell's law of distribution of velocities (derivation assuming constants a and b).
III	CBD	**THERMODYNAMICS** Heat engines: Otto Engine, Otto Cycle, expression for efficiency. Diesel engine: Diesel cycle, expression for efficiency
IV	SSK	**LOW PRESSURE AND TEMPERATURE** Introduction- Production of low pressure: Exhaust pump and its characteristics (Exhaust pressure, degree of vacuum attainable, speed of pump). 1. Diffusion pump: Principle, construction.
V	BMT	**RADIATION** Radiation pressure (qualitative), Stefan's Law and its derivation using radiation pressure. Determination of Stefan's constant.

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

IV SEM, DEC- JAN 2018-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	SGK	**INTERFERENCE** Interference due to division of wave front: Fresnel's bi-prism- Determination of wavelength of monochromatic light. Interference due to division of amplitude: Stokes' treatment of reflection and Transmission at Interface.
II	RSK	**DIFFRACTION** Fresnel's class: Fresnel's theory of half-period zones considering plane waves. Rectilinear propagation of light. Zone plate: Construction, theory, expression for focal length. Problems.
III	SVK	**POLARISATION:** Analytical treatment of circularly and elliptically polarized light. Huygens theory of double refraction, Positive and negative crystals. Retardation Plates.
IV	LSL	**THERMO-ELECTRICITY:** Seebeck Effect and its explanation. Variation of emf with temperature, Neutral Temperature and Temperature of inversion. Thermo-electric Series. Laws of Thermo-Electric effects. Peltier Effect-explanation. Peltier's Coefficients and thermodynamics of Peltier's Effect.
V	PSP	**ELECTROMAGNETIC THEORY:** Mathematical background: gradient of scalar, divergence and curl ofvector and their physical significance. Gauss Law, Stokes' and Green's Theorem (without proof).

SUS

Head

Department of Physics

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI - SEM Paper – I DEC- JAN 2018-19

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**SOLID STATE PHYSICS** Crystal structure : Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, Coordination numbers, Bravais lattices, Seven crystal system, Miller Indices, Expression for inter planner spacing, Crystal structure of NaCl and KCL
II	PSP	**FREE ELECTRON THEORY** Classical free electron model, expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory. Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors
III	SVK	**NUCLEAR MODELS** Liquid drop model- Explanation of semi empirical mass formula, Explanation of nuclear fission on the basis of liquid drop model, Shell model (qualitative) and Magic numbers.

VI - SEM Paper – II

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	BMT	**INTEGRAL TRANSFORMS** Fourier transform: Definition, Fourier integral, inverse transform, Fourier transform of derivatives.
II	AUN	**OPTOELECTRONICS** Optical fiber: Introduction, Types of Optical fibers (Single mode, Multi-mode), Grading, Numerical aperture (derivation), Coherent bundle, Transmission loss, Attenuation and Distortion, Fiber Optical communication system (Block diagram with each block explanation).
III	SSK	**ELECTRONICS** Integrated Circuits – Timer IC – 555 & 7400 – block diagram and explanation of pin configuration. Uses of timer IC in different cases. Generation of rectangular and square wave using time IC.

Head

Department of Physics

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2018-19

B.Sc1st Semester

- **Simple Harmonic Motion**: Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation), Composition of two rectangular SHM's having same periods, Lissajous figures. Problems.

- **Surface Tension**: Excess Pressure, Surface energy

- **Angular Momentum**: Angular momentum of a single particle, system of particles, Torque, Law of conservation of angular momentum, Torque, central force, Kepler's second law of planetary motion.

- **Elasticity**: Elasticity, Plasticity, Stress and types of stress, Strain and types of strain, Hooke's law, Modulus of elasticity and its types. Work done per unit volume in a strain (Elongation strain, volume strain, shearing strain) Moduli of elasticity of isotropic materials and relation between three moduli of elasticity. (Derivation).

- **Rigid Body Dynamics**: Introduction, Torque, Kinetic energy of rotation, Moment of inertia and its physical significance. Radius of gyration. Derivation for theorems of moment of inertia.(Parallel and Perpendicular Axes Theorems). Derivation of moment of inertia of a thin uniform rod.

S.Kulkarni

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2018-19

B.Sc. 3rd Semester

- **Dielectrics:** Dielectric Polarization, Polar and Non-polar molecules. Dipole moment. Definition of polarization. Gauss's law in dielectrics, Relation between $\bar{E}$, $\bar{D}$ & $\bar{P}$. Boundary conditions of $\bar{E}$ and $\bar{D}$. Relation between χ_e and K. Problems
- **Geometrical Optics:** Fermat's principle-statement and explanation, derivation of laws of reflection and refraction. Abbe's sine rule (derivation), Lagrange and Helmholtz's relation (derivation).
- **Current Electricity:** Statement of Biot-Savart law. Derivation of expression for magnetic field due to a straight conductor and axis of circular coil carrying current (both derivation), Helmholtz galvanometer- principle, construction and working + problems.
- **Dynamics of charged particles:** Charged particles in a uniform (static) electric field applied along the direction of particle motion. Energy acquired during the motion of charged particle in uniform transverse electric field. Charged particles moving in a constant uniform magnetic field. Problems.
- **Electrical Instruments and Measurements:** Ballistic galvanometer, Theory of BG, Condition for moving coil galvanometer to be ballistic and dead beat, charge sensitivity, current sensitivity and their relationship.

Sukalkani

B.Sc. VI^th Sem

Paper - II

Unit - II Optoelectronics

Optical fibre : Introduction, to optics Basics, reflection, laws of reflection, refraction, laws of refraction, refractive index, Total internal reflection, conditions for TIR

→ Optical fibre system structure, propagation of ~~optical~~ light through an optical fibre Acceptance angle, acceptance cone, Numerical aperture & derivation for that Fractional refractive index change Relation between NA, acceptance angle and fractional RI change.

Problems

G.S.Sc College, Belagavi

Department of Physics

Syllabus for 1st Internal Test 2018-19

B.Sc 5th Semester Paper-1

Classical Mechanics: Constraints, Types with example, Degrees of Freedom, Configuration Space, Principle of Virtual Work, Generalized Co-ordinates, Virtual displacement, Velocity ,

Relativity: Frame of reference. Michelson Morley Experiment, Negative results. Postulates Special Theory of Relativity. Lorentz Transformation Equations, Relativity of space and time. Length Contraction and Time dilation.

Network Theorems: Thevenin's theorem, Norton's theorem, Maximum power transfer theorem, Superposition theorem + Problems .

Paper-2

Quantum Mechanics: Compton scattering, de-Broglie Hypothesis, matter waves, Devission & Germer Experiment.

Atomic Spectra: Vector atom model-electron spin and quantization , l-s & j-j coupling, Bohr's magneton, magnetic moment of electron due to orbital motion.

Mathematical Physics: Legendre Polynomials, Rodrigue's Formula, Generating Function, Recursion Relations + Problems.

Skulkarni

G S Sc COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, OCTOBER 2018

Date: 1-10-2018

UNIT	SYLLABUS TO BE COVERED
I	**Linear Momentum** Derivation of equation of motion for Single Stage Rocket. Problems
II	**Angular Momentum** Portion completed
III	**Rigid Body Dynamics** Theory of Bar pendulum and compound pendulum. Experimental determination of Moment of inertia of Fly wheel with relevant theory.
IV	**Elasticity** Portion completed
V	**Viscosity** Motion of a body in a viscous medium –Stoke's law with derivation and expression for terminal velocity example: velocity of rain drop. Problems.

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM OCTOBER, 2018

Date: 1-10-2018

UNIT	SYLLABUS TO BE COVRERED
I	**Geometrical Optics and Cardinal Points :** Portion Completed
II	**Aberrations:** Ramsden's and Huygen's eye-pieces. Construction and location of cardinal points. Problems.
III	**Dielectrics:** Experimental determination of dielectric constant of a solid. Problems.
IV	**Current Electricity:** Measurement of high resistance by leakage method. Problems.
V	**Electrical Instruments And Measurements:** CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems

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Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, OCTOBER 2018

Date: 1-10-2018

UNIT	FACULTY	SYLLABUS TO BE COVERED
II	LSL	Reduction of two body problem to equivalent one body problem. Expression for total energy of orbit (equivalent of single body) and Classification of Orbits. Kepler's Law of Planetary Motion and their derivation from Lagranges equation of motion.
II	RSK	**Nano Physics:** Size effect: surface volume ratio, quantization, Dangling bonds, Island formation and self-assembly. Quantum computing, single electron transistor. Examples: Graphene and fullerene. Problems
IV	SVK	**Analog Electronics: Power Supply** Explanation of Zener Breakdown. Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier
V	PSP	**Transistor:** Problems

PAPER – II

II	BMT	**Wave Mechanics:** Eigen Function and Eigen values. Linear harmonic oscillator with energy expression (derivation). Concept of zero point energy and degeneracy. Problems
IV	SSK	**Raman Effect:** Raman Scattering. Experimental set up. Raman Spectrum. Explanation OF Raman effect on the basis of quantum theory. Application of Raman Effect. Problems
I/V	AUN	**Laser and Mathematical Physics:** Stimulated Absorption and Emission, Einstein A and B coefficients. Conditions for LASER action, Gas LASERs He-Ne, Diode LASERs, Characters and applications of laser. Problems Hermite functions: Hermite polynomials, generating function, recursion relations, orthogonality. Problems.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, SEPTEMBER 2018

Date: 1-9-2018

UNIT	SYLLABUS TO BE COVERED
I	**Linear momentum** Elastic Collision between two particles in Laboratory and Center of Mass frames of references. Inelastic collision between two particles in Laboratory and center of Mass frames of reference (without derivation), Conservation of Linear Momentum in case of variable mass.
II	**Conservation of Energy and Elements of Satellite Motion** Conservation of energy as a basic principle including mass-energy (qualitative)Simple harmonic oscillations of a Light Spiral Spring (illustration with derivation)
III.	**Rigid body dynamics** Qualitative discussion on Moment of Inertia of hollow and solid cylinders. Theory of bar pendulum and compound pendulum. Problems
IV	**Elasticity** Theory of Light cantilever and loaded at the free end and at the center. Expression for couple per unit twist, torsional pendulum. Problems
V	**Viscosity** Introduction to viscosity, streamline and turbulent flow. Derivation of Poiseuelli's formula for the flow of viscous fluid through a narrow tube.

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G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM SEPTEMBER, 2018

Date: 1-9-2018

UNIT	SYLLABUS TO BE COVRERED
I	**CARDINAL POINTS:** Equivalent focal length of two thin lenses separated by a distance (derivation) and location of Cardinal Points. Problems.
II	**ABERRATIONS:** Methods to reduce spherical aberration (qualitative) condition for Achromatism of two thin lenses in contact and separated by a distance.
III	**DIELECTRICS:** Expression for electrostatic energy in a medium surrounding charged conductor. Derivation of Clausius-Mosotti equation and its limitations. Experimental determination of dielectric constant of a solid. Problems.
IV	**TRANSIENT CIRCUITS:** Time constant of RL and RC circuits. LCR circuit (Discussion of special cases). Measurement of high resistance by leakage method. Problems.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Theory of earth inductor. Determination of BH, BV and Φ. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems.

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Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, September 2018

Date: 1-9-2018

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion. **a.** Motion of a Single Particle in Cartesian Co-ordinates. **b.** Harmonic Oscillator. Problems
III/IV	**RELATIVITY** Mass Energy Relation. Problems **Power supply** Unregulated bridge rectifier (efficiency, ripple factor, PIV, TUF and Voltage regulation-qualitatively.) Filters: capacitor filter, LC filter- section filter (study of wave forms qualitatively) Zener diode: characteristics parameter.
V	**Transistor:** Hartely and Phase shift oscillators. FET-Types, characteristics and parameters. FET as common source amplifier (Qualitative). Problems.

V-SEM PAPER-II, September 2018

	SYLLABUS TO BE COVERED
II	**WAVE MECHANICS:** Time independent Schrodinger's wave equation (derivation). Physical significance of wave function. Derivation of expression for energy of particle in a box.
III/IV	**ATOMIC SPECTRA** Energy level diagram for sodium D lines. Anomalous Zeeman effect (qualitative) .Lande's g_factor. Problems. **MOLECULAR SPECTRA** Spectra of diatomic molecules: Nature of Molecular spectrum, Different types of energies of a molecule. Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule.
V	**MATHEMATICAL PHYSICS** **Bessel functions:** Bessel functions of first kind, recursion relations. Orthogonality.

SMS

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Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, AUGUST 2018

Date: 01- 08 -2018

UNIT	SYLLABUS TO BE COVERED
I	**SHM** Problems on SHM, Composition oftwo rectangular SHM's having same periods, Lissajous figures. **LINEAR MOMENTUM** Concept of frames of reference. Laws of conservation of Linear Momentum for a System of particles. Elastic Collision between two particles in Laboratory and Center of Mass frames of references.
II	**ANGUALAR MOMENTUM FOR SYSTEM OF PARTICLES:** Derivation of velocity (orbital velocity and escape velocity) in closed and Open orbit in a central field, Escape velocity of a satellite: stationary satellites, weightlessness.
III	**RIGID BODY DYNAMICS;** Derivation of expression for moment of inertia of Rectangular lamina, Thin Uniform rod, Circular disc. Qualitative discussion on Moment of Inertia of Annular ring.
IV	**ELASTICITY** Poisson's Ratio, bending of beams, expression for bending ratio, expression for bending moment (derivation).
V	**SURFACE TENSION:** Expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method with relevant theory. Effect of temperature and impurity on surface tension. Example.

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM August, 2018

Date :1-8-2018

UNIT	SYLLABUS TO BE COVERED
I	**CARDINAL POINTS:** Cardinal points of optical system: Principal foci, principal points and nodal points. Newton's formula and graphical construction of image. Equivalent focal length of two thin lenses separated by a distance (derivation) and location of Cardinal Points. Problems.
II	**DYNAMICS OF CHARGED PARTICLES** Charged particles moving in a constant uniform magnetic field. Problems **ABERRATIONS:** Spherical and chromatic aberrations. Method to reduce spherical aberration (qualitative) condition for Achromatic of two thin lenses in contact and separated by a distance.
III	**DIELECTRICS:** Atomic Polarizability, electric susceptibility, relation between electric constant and electric susceptibility. Expression for mechanical stress on surface of charged conductor. Application to electrified soap bubble.
IV	**TRANSIENT CURRENTS:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit. Time constant of RL and RC circuits. LCR circuit (Discussion of special cases). Measurement of high resistance by leakage method. Problems.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Determination of self-inductance (L) by Rayleigh's method with necessary theory. Theory of earth inductor. Determination of B_H, B_V and Φ.

SUS

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, August 2018

Date:01-08-2018

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** Velocity, Force, Kinetic and Potential Energies(derivation). D'Alembert's Principle, Lagrange's equation ofmotion from D'Alembert's Principle.
III	**RELATIVITY** Relativity of Length andTime. Law of Addition of Velocities. Variation of Mass with Velocity.
V	**TRANSISTOR** h-parameters of a transistor and their determination using CE configuration transistor as CE amplifier with frequency response .Types of feedback, transfer gain with feedback (derivation). Oscillators-Transistor as an oscillator, comparison between amplifier and oscillator. Classification of oscillators-damped and undamped oscillators, the oscillatory circuit, frequency of oscillatory current, essentials of a feedback LC oscillator.

V-SEM PAPER-II, August 2018

UNIT	SYLLABUS TO BE COVERED
I	**QUANTUM MECHANICS:** G.P.Thomson exprment, Uncertainity principle Statement, Illustration by Gamma-Ray Microscope.
III	**ATOMIC SPECTRA** Magnetic field effect on light- Magnetic moment of electron due to orbital motion. Larmor precession. Normal Zeeman effect- explanation set up Quantum theory of normal Zeeman effect.
V	**MATHEMATICAL PHYSICS** Generating function , Orthogonality and normalization,associated Legendre functions ,icspherical harmonics.

SWS

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, JULY 2018-19

UNIT	SYLLABUS TO BE COVERED
I	**SHM** Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation).
II	**Angular momentum for system of particles:** Angular Momentum and torque, Conservation of angular momentum, central force.Kepler's Second Law(derivation).
III.	**Rigid body dynamics** Moment of inertia and its physical significance. Derivation for theorems of momentof inertia. Derivation of expression for moment of inertia of rectangular lamina.
IV	**Elasticity** Moduli of elasticity of isotropic materials and relation between three moduli of elasticity (derivation). Poisson's Ratio.
V	**Surface tension** Introduction to surface tension, derivations for Pressure difference across a curvedliquid surface.

Sukulkarni

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM JULY 2018/2019

UNIT	SYLLABUS TO BE COVRERED
I	**GEOMETRICAL OPTICS:** Fermat's principle-statement and explanation, derivation of laws of reflection and refraction. Abbe's sine rule (derivation), Lagrange and Helmholtz's relation(derivation). Problems.
II	**DYNAMICS OF CHARGED PARTICLES** Charged particles in a uniform (static) electric field applied along the direction of particle motion. Energy acquired during the motion of charged particle in uniform transverse electric field.
III	**DIELECTRICS:** Electric polarization. Gauss law (vector form) in dielectrics and electric displacement. Boundary conditions at a surface separating two dielectric media (derivation). Relation between Electric Displacement (D), Electric field(D), Polarization(P).
IV	**CURRENT ELECTRICITY** Statement of Biot – Savart's Law, Derivation of expression for magnetic field due to a straight conductor carrying current, Mention of expression of variation of magnetic field along the axis of a circular coil and determination of BH. HelmholtzGalvanometer: Principle, Construction and Working. Problems.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Ballistic galvanometer: Condition for moving coil galvanometer to be ballistic and dead beat. Theory of BG. Charge Sensitivity and current sensitivity and their relationship, Determination of self-inductance(L) by Rayleigh's method with necessary theory.

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V -SEM PAPER-I, JULY 2018/2019

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	LSL	**CLASSICAL MECHANICS** Constraints,Types with example. Degrees of Freedom, Configuration Space, Principle of Virtual Work. Generalized Co-ordinates, Virtual displacement, Velocity, Force.
III	SVK	**RELATIVITY** Michelson – Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations equations(Derivation).
III	PSP	**NETWORK THEOREMS:** Current and voltage sources , Superposition theorem, Thevinin's and Norton's Theorem Maximum power transfer Theorem (Derivation for all theorems).

V -SEM PAPER-II, JULY 2018/2019

I	BMT	**QUANTUM MECHANICS** Compton effect –(qualitatively). Devission and Germer Experiment, de – Broglie Hypothesis G.P. Thomoson experiment. Uncertainty principle Statement, Illustration by Gamma Ray Microscope.
II	SSK	**ATOMIC SPECTRA** Vector atom model-electron spin and quantization and quantum members. Stern Gerlach experiments. Coupling scheme for single valance and two valance system.
III	AUN	**MATHEMATICAL PHYSICS** Legender functions: Lengender polynomials, Rodrigue's formula, generating functions and recursion relations

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Head

Department of Physics

2017-2018

G S S COLLEGE BELAGAVI

MONTHLY TEACHING PLAN

II SEM, March-18

UNIT	SYLLABUS TO BE COVERED
I	**SOUND** Theory of Helmholtz Resonator and determination of unknown frequency. Transducers and their characteristics: Pressure microphone (Carbon), moving coil loud speaker. Problems.
II	**KINETIC THEORY OF GASES** Brownian Motion and derivation of Einstein's equation for translational Brownian motion. And Problems based on Maxwell's law of distribution of velocities.
III.	**THERMODYNAMICS** Entropy – Temperature diagram, Second law of thermodynamics. Maxwell's Relations: Derivation of Maxwell's Relations. Applications to Clausius – Clapeyron's equation. Problems.
IV	**LOW PRESSURE AND TEMPERATURE** 2. Ionization gauge: Principle, construction and working.Production of low temperature, Joules Thomson effect, porous plug experiment
V	**Radiation**Rayleigh – Jean's Law (qualitative). Planck's law and its derivation. Derivation of Wein's Displacement law from Planck's law. Problems.

G S S COLLEGE BELAGAVI

MONTHLY TEACHING PLAN

II SEM, DEC- JAN 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**SOUND** Introduction-types of vibrations.Free and forced vibrations, resonance with examples. Analytical treatment of undamped and Dampedvibrations.
II	**KINETIC THEORY OF GASES** Introduction-Postulates of kinetic theory of gases, Maxwell's law of distribution of velocities (derivation assuming constants a and b).
III.	**THERMODYNAMICS** Heat engines: Otto Engine, Otto Cycle, expression for efficiency. Diesel engine: Diesel cycle, expression for efficiency
IV	**LOW PRESSURE AND TEMPERATURE** Introduction- Production of low pressure: Exhaust pump and its characteristics (Exhaust pressure, degree of vacuum attainable, speed of pump). 1. Diffusion pump: Principle, construction and working.
V	**Radiation** Radiation pressure (qualitative), Stefan's Law and its derivation using radiation pressure. Determination of Stefan's constant.

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MONTHLY TEACHING PLAN

II SEM, Feb-18

UNIT	SYLLABUS TO BE COVERED
I	**SOUND** Condition for amplitude at resonance, phase of forced vibrations, effect of damping onphase of forced vibrations.Effect of damping on phase of forced vibrations
II	**KINETIC THEORY OF GASES** Maxwell's law of distribution of velocities (derivation assuming constants a and b). Average, r.m.s and most probable velocity (derivation). Mean free path, derivation of Clausius expression and Maxwell's expression.
III.	**THERMODYNAMICS** Diesel engine: Diesel cycle, expression for efficiency and Carnot's Theorem. Entropy: Concept of entropy, change in entropy in reversible and irreversible processes.
IV	**LOW PRESSURE AND TEMPERATURE** 1. Diffusion pump: Principle, construction and working.
V	**Radiation** Energy distribution in the Black body spectrum. Wein's displacement law

G S S COLLEGE BELAGAVI

MONTHLY TEACHING PLAN

IV-SEM March-2018

UNIT	SYLLABUS TO BE COVRERED
I	**INTERFERENCE:** Multiple reflections, Mention of conditions for maxima and minima in case of transmitted light, Theory of Newton's Rings (derivation), Michelson's Interferometer: Construction and working, Formation of circular and straight fringes (qualitative), Determination of wavelength of monochromatic light.
II	**Diffraction:** Diffraction at Single Slit, intensity distribution due to single slit. Condition for maxima and minima. Plane transmission grating, dispersive power of grating, absent spectra and resolving power of prism and grating (derivation).
III	LCR parallel circuit-Expression for admittance and condition for resonance(using 'operator method'). Problem.
IV	Thermo-Electric (Tait) diagrams, its applications to determine, 1. Total emf, 2. Peltier emf, 3. Thomson emf 4. Neutral temperature and 5. Temperature of inversion.
V	**ELECTROMAGNETIC THEORY:** Pointing theorem (derivation) **ALTERNATING CURRENT:** Operator 'j'. Argand diagram. LCR series circuit. Expiration for current, impedance and phase (using 'j' operator method). Condition for resonance frequency, band width, quality factor and their relation(qualitative).

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MONTHLY TEACHING PLAN

IV-SEM DEC-JAN 2017/2018

UNIT	SYLLABUS TO BE COVRERED
I	**INTERFERENCE** Interference due to division of wave front: Fresnel's bi-prism- Determination ofwavelength of monochromatic light.
II	**DIFFRACTION** Fresnel's class:Fresnel's theory of half-period zones considering plane waves. Rectilinear propagation of light. Zone plate: Construction, theory, expression for focal length.
III	**POLARISATION:** Huygens theory of double refraction, Positive and negative crystals.Retardation Plates.
IV	**THERMO-ELECTRICITY:** Seebeck Effect and its explanation. Variation of emf with temperature,Neutral Temperature and Temperature of inversion. Thermo-electric Series. Laws of Thermo-Electric effects. Peltier Effect-explanation. Peltier's Coefficients and thermodynamics of Peltier's Effect.
V	**ELECTROMAGNETIC THEORY:** Mathematical background: gradient of scalar, divergence and curl ofvector and their physical significance. Gauss Law, Stokes' and Green's Theorem (without proof).Maxwell's equations: Derivation of Maxwell's equations in differential forms.

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MONTHLY TEACHING PLAN

IV-SEMFeb-2018

UNIT	SYLLABUS TO BE COVRERED
I	**INTERFERENCE** Fresnel's bi-prism- Determination of wavelength of monochromatic light. Interference duc to division of amplitude: Stokes' treatment of reflection and Transmission at interface. Thin Films, Conditions for maxima and minima in case of reflected light(derivation).
II	**DIFFRACTION** Fresnel's class: expression for focal length.Fraunhoffer class: Composition of 'n' number of SHMs of same amplitude and period having their phases increasing in arithmetic progression. Diffraction at Single Slit.
III	**POLARISATION:** 1. Quarter wave plate.2. Half wave plate. Production and Analysis of plane, Circularly and elliptically polarized light.
IV	**THERMO-ELECTRICITY:** Thermodynamics of Peltier's Effect. Thomson Effect -explanation. Thomson Coefficient. Derivation of the relation $\pi = T\, de/dT$ and $\sigma_a - \sigma_b = T\, d_2e/dT_2$
V	**ELECTROMAGNETIC THEORY:** Maxwell's equations: Derivation of Maxwell's equations in differential forms. Mention of integral forms and their physical significance. Derivation of general Plane Waveequations in free space.

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-I, March 2018

UNIT	SYLLABUS TO BE COVERED
II	Super Conductivity: Introduction, Occurrence of super conductivity, and destruction of super conductivity by magnetic field, Meissner effect, Isotope effect and applications.
III	NUCLEAR INSTRUMENTS: GM counter, scintillation counter, Linear accelerator and cyclotron. Problems
IV	solar azimuthal angle, surface azimuthal angle Solar radiation measurement, Angstrom compensation Pyrhilometer, and Pyronometer.
V	**DIGITAL ELECTRONICS** Number System-Decimal, Binary, Hexadecimal and their inter conversion Boolean algebra, Truth tables, De Morgan's theorems.Designing of logic gates using NAND and NOR Gates. **SPECIAL MATERIALS** Introduction, Classification of liquid crystals, Display system, Introduction to conducting polymers and applications .

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-II, March-2018

UNIT	SYLLABUS TO BE COVERED
IV	**Study of C-language:** Basic structure of C-Programming , tokens, keywords and identifiers, constants, variables, data types, decision control statement ,operators and expressions , loop control statements, decision making IF-ELSE statement for looping, case control statements.
II	Fiber Optical communication system (Block diagram with each block explanation).
III	Classification of radio waves, Types of waves, prepagation of radio waves through ionosphere (Qualitative), Critical frequency, Critical angle, Virtual height, Secant law. Modulation and Demodulation: Need for Modulation, Types of modulation, AM modulation, Block diagram of AM Transmitter, Significance of modulation factor, Frequency spectrum of AM and FM.,

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-I, DEC-JAN 2017/2018

UNIT	SYLLABUS TO BE COVERED
I	**SOLID STATE PHYSICS** Crystal structure : Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, Coordination numbers, Bravais lattices, Seven crystal system, Miller Indices, Expression for inter planner spacing
II	**UNIT II** Free electron Theory: Classical free electron model, expression for electricaland thermal conductivity, Weidman-Franz law, Failure of classical free electrontheory. Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors,
III	Nuclear Models: Liquid drop model- Explanation of semi empirical mass formula,
IV	**ENERGY SOURCES** Introduction, Convention and nonconventional energy sources

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM: PAPER-I, Feb - 2018

I	**SOLID STATE PHYSICS** Crystal structure of NaCl and KCl.Crystal diffraction: X-Ray diffraction. Bragg's law, Bragg's X-ray spectrometerpowdercrystal method. Problems Specific heats of solids: Classical theory, Einstein's and Debye's theory of specific heats.
II	Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors, experimental determination of energy gap, Hall Effect, expression for Hall coefficient and applications.
III	Nuclear Models: shell model and magic numbers, nuclear instruments: GM Counter,Linear accelerator, cyclotron
IV	Advantages of Solar energy, Solar radiation at Earth's surface, Solar radiation geometry- altitude angle, Zenith angle

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-II, DEC-JAN 2017/18

UNIT	SYLLABUS TO BE COVERED
I	**INTEGRAL TRANSFORMS** Fourier transform: Definition, Fourier integral, inverse transform, Fourier transform of derivatives. convolution (Mathematical Statement only), Parseval's theorem (Statement only) , Applications. Laplace transform: Definition, transform of elementary functions, inverse transforms
II	**OPTOELECTRONICS** Introduction, Light Emitting Diodes, Photo Diodes, Laser Diodes (Pin, Avalanche diodes) Opto-coupler. Optical fiber: Introduction, Types of Optical fibers (Single mode, Multi-mode), Grading, Numerical aperture (derivation)
V	**ELECTRONICS** Non – Sinusoidal Oscillators – Multivibrator – types of Multivibrator, Uses of Multivibrator. Explanation of astable, monostable and bistable Multivibrator Integrated Circuits – Timer IC – 555 & 7400 – block diagram and explanation of pin configuration. Uses of timer IC in different cases. Generation of rectangular and square wave using time IC.

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DEPT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-II, Feb -2018

UNIT	SYLLABUS TO BE COVERED
I	transform of derivations, differentiation and integration of transforms, solutions of differential equations. Difference between Laplace and Fourier transform
II	**OPTOELECTRONICS** Coherent bundle, Transmission loss, Attenuation and Distortion
IV	Computer programming Preliminaries, Algorithms, flowcharts and their symbols, simple flow chart examples.
V	**ELECTRONICS** Op-Amp – Op-Amp symbol and polarity convention. Ideal op – Amp, Op-Amp as a inverter and non inverter, virtual ground and summing point. Op Amp applications as phase shift and Wien bridge oscillator. Problems

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING

V-SEM PAPER-I, OCTOBER 2017 -18

UNIT	SYLLABUS TO BE COVERED
IV	Analog Electronics: Zener diode: characteristics parameter. Explanation of Zener Breakdown. Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier. Problems
V	Transistor: FET- Types, characteristics and parameters. FET as a common source amplifier (Qualitative). Problems.

V-SEM PAPER-II, OCTOBER 2017-18

UNIT	SYLLABUS TO BE COVERED
I	LASER: Stimulated Absorption and Emission, Einstein A and B coefficients. Conditions for LASER action, Gas LASER He- Ne, Diode LASER, Characters and application of LASER. Problems
IV	RAMAN EFFECT: Raman Scattering. Experimental set up. Raman Spectrum, Explanation OF Raman effect on the basis of quantum theory. Application of Raman Effect. Problems

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, SEPTEMBER 2017 -18

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion. **a.** Motion of a Single Particle in Cartesian Co-ordinates. **b.** Harmonic Oscillator. Problems
III/IV	**RELATIVITY** Variation of Mass with Velocity. Mass Energy Relation. Problems **Power supply** Unregulated bridge rectifier(efficiency, ripple factor, PIV ,TUF and Voltage regulation-qualitatively.) Filters: capacitor filter, LC filter- section filter(study of wave forms qualitatively)
V	**Transistor:** Oscillators.-Transistor as an oscillator, comparison between amplifier and oscillator, Classification of oscillators-damped and undamped oscillators, the oscillatory circuit, frequency of oscillatoty current, essentials of a feedback LC oscillator. Hartely and Phase shift oscillators.

V-SEM PAPER-II, September 2017-18

UNIT	SYLLABUS TO BE COVERED
II	**WAVE MECHANICS:** Eigen function and Eigen values. Linear harmonic oscillator with energy expression (derivation).Concept of zero point energy and degeneracy. Problems
III	**ATOMIC SPECTRA** Magnetic field effect on light- Magnetic moment of electron due to orbital motion. Larm or precession. Normal Zeeman effect-explanation of experimental setup Quantum theory of normal Zeeman effect. Energy level diagram for sodium D lines. Anomalous Zeeman effect (qualitative).
V	**Hermite fuctions**: Hermite polynomials, generating functions, recursion relations, orthogonality. Problems

Head

Department of Physics

G S S COLLEGE BELAGAVI

DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, August 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion. **a.** Motion of a Single Particle in Cartesian Co-ordinates **b.** Harmonic Oscillator. Problems
III	**RELATIVITY** Relativity of Length andTime. Law of Addition of Velocities. Variation of Mass with Velocity. Mass EnergyRelation. Problems
V	**Transistor:** h-parameters of a transistor and their determination using CE configurationtransistor as CE amplifier with frequency response .Types of feedback, transfergain with feedback (derivation).

V-SEM PAPER-II, August 2017-18

UNIT	SYLLABUS TO BE COVERED
II	**WAVE MECHANICS:** Time independent Schrodinger's waveequation (derivation) Physical significance of wave function. Derivation ofexpression for energy of a particle in a box.
III	**ATOMIC SPECTRA** Vector atom model- electron spin and quantization and quantumnumbers. Stern Gerlach experiments. Coupling scheme for single valance andtwo valance systems.
V	Orthogonality and normalization associated Legendre functions, spherical harmonics. **Bessel functions**: Bessel functions of the first kind, recursion relations,Orthogonality.

Head

Department of Physics

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING

III SEM, OCTOBER4 2017-2018

UNIT	SYLLABUS TO BE COVERED
I	Cardinal Points : Thick lens and power of thick lens
II	Dynamics Of Charged Partiles: Energy acquired during the motion of charged particle in uniform transverse electric field. Charged particles moving in a constant uniform magnetic field. Problems
III	Dielectrics: Experimental determination of dielectric constant of a solid by Hopkinson's Null Method Problems.
IV	Transient Currents: Measurement of high resistance by leakage method. Problems.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, June/July 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS :** Constraints, Types with example, Degrees of Freedom, Configuration Space, Principle of Virtual Work, Generalized Co-ordinates, Virtual displacement, Velocity, Force, Kinetic and Potential Energies (derivation)
II	Reduction of two body problem to equivalent one body problem. Expression for total energy of orbit (equivalent of single body) and Classification of Orbits. Kepler's Law of Planetary Motion and their derivation from Lagranges equation of motion.
III	**RELATIVITY:** Michelson – Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations equations (Derivation).
IV	**NETWORK THEOREMS:** Current and voltage sources , Superposition theorem, Thevinin's and Norton's Theorem Maximum power transfer Theorem (Derivation for all theorems).

V-SEM PAPER-II, June/July 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**QUANTUM MECHANICS:** Compton effect – (qualitatively), Devission and Germer Experiment, de – Broglie Hypothesis G.P.Thomoson experiment, Uncertainty principle Statement, Illustration by Gumma – Ray Microscope.
IV	**MOLECULAR SPECTRA:** Spectra of diatomic molecules: Nature of Molecular spectrum, Different types of energies of a molecule, Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule.
V	**MATHEMATICAL PHYSICS:** Legender functions: Lengender polynomials, Rodrigue's formula, generating functions and recursion relations

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM SEPTEMBER, 2017-18

UNIT	SYLLABUS TO BE COVRERED
I	**CARDINAL POINTS:** Location of Cardinal Points. Problems.
II	**ABERRATIONS:** Ramsden's and Huygen's eye-pieces: Construction and location of cardinal points. Problems. **DYNAMICS OF CHARGED PARTICLES:** Charged particles in a uniform (static) electric field applied along the direction of particle motion.
III	**DIELECTRICS:** Derivation of Clausius – Mosotti equation and its limitations. Experimental determination of dielectric constant of a solid. Problems.
IV	**TRANSIENT CIRCUITS:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit. Time constants of RL and RC circuits. LCR circuit (Discussion of special cases).
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Theory of earth inductor. Determination of BH, BV and Φ. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM August, 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**CARDINAL POINTS:** Cardinal points of optical system: Principal foci, principal points and nodal points. Newton's formula and graphical construction of image. Equivalent focal length of two thin lenses separated by a distance (derivation
II	**ABERRATIONS:** Condition for Achromatism of two thin lenses in contact and separated by a distance. Ramsden's and Huygen's eye-pieces: Construction and location of cardinal points. Problems.
III	**DIELECTRICS:** Expression for mechanical stress on surface of charged conductor. Application to electrified soap bubble. Expression for electrostatic energy in a medium surrounding charged conductor.
IV	**CURRENT ELECTRICITY** Helmholtz Galvanometer: Principle, Construction and Working.(Problems). **TRANSIENT CURRENTS:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Determination of self-inductance (L) by Rayleigh's method with necessary theory. Theory of earth inductor.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM JUNE/JULY 2017-18

UNIT	SYLLABUS TO BE COVRERED
I	**GEOMETRICAL OPTICS:** Fermat's principle-statemen: and explanation, derivation of laws of reflection and refraction. Abbe's sine rule (derivation).
II	**ABERRATIONS:** Spherical end chromatic aberrations. Methods to reduce spherical aberration (Qualitative) condition for Achromatism of two thin lenses in contact and separated by a distance.
III	**DIELECTRICS:** Electric polarization. Gauss law (vector form) in dielectrics and electric displacement. Boundary conditions at a surface separating two dielectric media (derivation).
IV	**CURRENT ELECTRICITY** Statement of Biot – Savart's Law, Derivation of expression for magnetic field due to a straight conductor carrying current, Mention of expression of variation of magnetic field along the axis of a circular coil and determination of BH. Helmholtz Galvanometer: Principle, Construction and Working.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Ballistic galvanometer: Condition for moving coil galvanometer to be ballistic and dead beat Theory of BG. Charge Sensitivity and current sensitivity and their relationship

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, SEPTEMBER 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**Linear momentum** Conservation of Linear Momentum in case of variable mass. Derivation of equation of motion for Single Stage Rocket. Problems.
II	**Angular momentum for system of particles:** Derivation of velocity (orbital velocity and escape velocity) in Closed and Open orbitin a central field, Escape velocity of a satellite: stationary satellites, weightlessness.Problems
III.	**Rigid body dynamics** Qualitative discussion on Moment of Inertia of Annular ring ,hollow and solid cylinders . Theory of bar pendulum and compound pendulum. Experimental determination of Moment of inertia of Fly wheel with relevant theory. Problems
IV	**Elasticity** Expression for bending moment (derivation). Theory of Light cantilever and loaded at the free end and at the center. Expression for couple per unit twist, torsional pendulum. Problems
V	**Surface tension** Motion of body in a viscous medium-Stoke's law with derivation and expression for terminal velocity example: velocity of rain drop. Problems

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, AUGUST 2017 - 18

UNIT	SYLLABUS TO BE COVERED
I	**LINEAR MOMENTUM** Concept of frames of reference. Laws of conservation of Linear Momentum for a System of particles. Elastic Collision between two particles in Laboratory and Center of Mass frames of references. Inelastic collision between two particles in Laboratory and Center of Mass frames of references (without derivation).
II	**ANGUALAR MOMENTUM FOR SYSTEM OF PARTICLES:** Derivation of velocity (orbital velocity and escape velocity) in Closed and Open orbiting a central field, Escape velocity of a satellite: stationary satellites, weightlessness.
III.	**RIGID BODY DYNAMICS:** Derivation of expression for moment of inertia of rectangular lamina, Thin Uniform rod, Circular disc. Qualitative discussion on Moment of Inertia of Annular ring.
IV	**ELASTICITY:** Poisson's Ratio, bending of beams, expression for bending Ratios, Expression for bending moment(derivation)
V	**SURFACE TENSION:** Expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method with relevant theory. Effect of temperature and impurity on surface tension. Example

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, JUNE/JULY 2017-18

UNIT	SYLLABUS TO BE COVERED
I	**SHM** Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation), composition of two rectangular SHM's having same periods, Lissajous figures.Problems
II	**Angular momentum for system of particles:** Angular Momentum and torque, Conservation of angular momentum, central force,Kepler's Second Law(derivation). Spin, Orbital and Total Angular Momentum. Problems.
III.	**Rigid body dynamics** Moment of inertia and its physical significance. Derivation for theorems of momentof inertia. Derivation of expression for moment of inertia of rectangular lamina, thinUniform rod, Circular disc
IV	**Elasticity** Moduli of elasticity of isotropic materials and relation between three moduli of elasticity (derivation). Poisson's Ratio, bending of beams, expression for bendingRatio.
V	**Surface tension** Introduction to surface tension, derivations for Pressure difference across a curvedliquid surface

2016-2017

G S S COLLEGE BELAGAVI

MONTHLY TEACHING PLAN

II SEM, DEC- JAN 2016-17

Date: 28-12-2016

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOUND** Introduction-types of vibrations. Free and forced vibrations, resonance with examples. Analytical treatment of undamped and Damped vibrations.
II	RSK	**KINETIC THEORY OF GASES** Introduction-Postulates of kinetic theory of gases, Maxwell's law of distribution of velocities (derivation assuming constants a and b).
III.	CBD	**THERMODYNAMICS** Heat engines: Otto Engine, Otto Cycle, expression for efficiency. Diesel engine: Diesel cycle, expression for efficiency
IV	SSK	**LOW PRESSURE AND TEMPRATURE** Introduction- Production of low pressure. Exhaust pump and its characteristics (Exhaust pressure, degree of vacuum attainable, speed of pump). 1. Diffusion pump: Principle, construction and working. 2. Ionization gauge: Principle, construction
V	BMT	**Radiation** Radiation pressure (qualitative), Stefan's Law and its derivation using radiation pressure. Determination of Stefan's constant.

II SEM, Feb-17

I	NDH	**SOUND** Condition for amplitude at resonance, phase of forced vibrations, effect of damping on phase of forced vibrations.
II	RSK	**KINETIC THEORY OF GASES** Maxwell's law of distribution of velocities (derivation assuming constants a and b). Average, r.m.s and most probable velocity (derivation). Mean free path
III.	CBD	**THERMODYNAMICS** Diesel engine: Diesel cycle, expression for efficiency and Carnot's Theorem. Entropy: Concept of entropy. change in entropy in reversible and irreversible processes.
IV	SSK	**LOW PRESSURE AND TEMPRATURE** Production of low temperature, joules Thomson effect, porous plug experiment
V	BMT	**Radiation** Energy distribution in the Black body spectrum. Wein's displacement law

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

II SEM, March 2016-17

UNIT	SYLLABUS TO BE COVERED
I	**SOUND** Theory of Helmholtz Resonator and determination of unknown frequency. Transducers and their characteristics: Pressure microphone (Carbon), moving coil loud speaker. Problems.
II	**KINETIC THEORY OF GASES** Brownian Motion and derivation of Einstein's equation for translational Brownian motion. And Problems based on Maxwell's law of distribution of velocities.
III.	**THERMODYNAMICS** Entropy – Temperature diagram, Second law of thermodynamics. Maxwell's Relations: Derivation of Maxwell's Relations. Applications to Clausius – Clapeyron's equation. Problems.
IV	**LOW PRESSURE AND TEMPERATURE** 2. Ionization gauge: Principle, construction and working. Production of low temperature, Joules Thomson effect, porous plug experiment
V	**RADIATION :** Rayleigh – Jean's Law (qualitative). Planck's law and its derivation. Derivation of Wein's Displacement law from Planck's law. Problems.

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MONTHLY TEACHING PLAN

IV-SEM DEC-JAN 2016/2017

Date -28-12-2016

UNIT	FACULTY	SYLLABUS TO BE COVRERED
I	PSK	**INTERFERENCE** Interference due to division of wave front: Fresnel's bi-prism- Determination of wavelength of monochromatic light.
II	KPB	**DIFFRACTION** Fresnel's class: Fresnel's theory of half-period zones considering plane waves. Rectilinear propagation of light. Zone plate: Construction, theory, expression for focal length.
III	SVK	**POLARISATION:** Huygens theory of double refraction, Positive and negative crystals. Retardation Plates.
IV	VRV	**THERMO-ELECTRICITY:** Seebeck Effect and its explanation. Variation of emf with temperature, Neutral Temperature and Temperature of inversion. Thermo-electric Series. Laws of Thermo-Electric effects. Peltier Effect-explanation. Peltier's Coefficients and thermodynamics of Peltier's Effect.
V	PSP	**ELECTROMAGNETIC THEORY:** Mathematical background: gradient of scalar, divergence and curl of vector and their physical significance. Gauss Law, Stokes' and Green's Theorem (without proof). Maxwell's equations: Derivation of Maxwell's equations in differential forms.

IV-SEM Feb-2017

I	PSK	**INTERFERENCE** Fresnel's bi-prism- Determination of wavelength of monochromatic light. Interference due to division of amplitude: Stokes' treatment of reflection and Transmission at interface. Thin Films, Conditions for maxima and minima in case of reflected light (derivation).
II	KPB	**DIFFRACTION** Fresnel's class: expression for focal length. Fraunhoffer class: Composition of 'n' number of SHMs of same amplitude and period having their phases increasing in arithmetic progression. Diffraction at Single Slit.
III	SVK	**POLARISATION:** 1. Quarter wave plate. 2. Half wave plate. Production and Analysis of plane, Circularly and elliptically polarized light.
IV	VRV	**THERMO-ELECTRICITY:** Thermodynamics of Peltier's Effect. Thomson Effect - explanation. Thomson Coefficient.
V	PSP	**ELECTROMAGNETIC THEORY:** Maxwell's equations: Derivation of Maxwell's equations in differential forms. Mention of integral forms and their physical significance. Derivation of general Plane Wave equations in free space.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

IV-SEM March-2016-17

UNIT	SYLLABUS TO BE COVRERED
I	**INTERFERENCE:** Multiple reflections, Mention of conditions for maxima and minima in case of transmitted light. Theory of Newton's Rings (derivation). Michelson's Interferometer: Construction and working. Formation of circular and straight fringes (qualitative). Determination of wavelength of monochromatic light.
II	**Diffraction:** Diffraction at Single Slit, intensity distribution due to single slit. Condition for maxima and minima. Plane transmission grating, dispersive power of grating, absent spectra and resolving power of prism and grating (derivation).
III	LCR parallel circuit-Expression for admittance and condition for resonance(using 'operator method'). Problem.
IV	Thermo-Electric (Tait) diagrams, its applications to determine, 1. Total emf, 2. Peltier emf, 3. Thomson emf 4. Neutral temperature and 5. Temperature of inversion.
V	**ELECTROMAGNETIC THEORY:** Pointing theorem (derivation) **ALTERNATING CURRENT:** Operator 'j'. Argand diagram. LCR series circuit. Expiration for current, impedance and phase (using 'j' operator method). Condition for resonance frequency, band width, quality factor and their relation (qualitative).

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MONTHLY TEACHING PLAN

VI-SEM PAPER-I, DEC-JAN 2016/2017

Date : 28-12-2016

UNIT	FACULTY	SYLLABUS TO BE COVERED
I	NDH	**SOLID STATE PHYSICS** Crystal structure : Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, Coordination numbers, Bravais lattices, Seven crystal system, Miller Indices, Expression for inter plannar spacing
II	PSP	**UNIT II** Free electron Theory: Classical free electron model, expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory. Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors.
III	SVK	Nuclear Models: Liquid drop model- Explanation of semi empirical mass formula,

VI-SEM PAPER-II, DEC-JAN 2016/2017

I	BMT	**INTEGRAL TRANSFORMS** Fourier transform: Definition, Fourier integral, inverse transform, Fourier transform of derivatives.
II	PSK	**OPTOELECTRONICS** Introduction, Light Emitting Diodes, Photo Diodes, Laser Diodes (Pin, Avalanche diodes)
V	SSK	**ELECTRONICS** Non – Sinusoidal Oscillators – Multivibrators – types of multivibrators, Uses of multivibrators. Explanation of astable, monostable and bistable multivibrators

VI-SEM PAPER-I, Feb - 2017

I	NDH	**SOLID STATE PHYSICS** Crystal structure of NaCl and KCl. Crystal diffraction: X-Ray diffraction. Bragg's law, Bragg's X-ray spectrometer powder crystal method. Problems
II	PSP	**UNIT II** Semiconductors: Expression for electrical conductivity in case of intrinsic semiconductors, experimental determination of energy gap, Hall Effect, expression for Hall coefficient and applications.
III	SVK	Nuclear Models: shell model and magic numbers, nuclear instruments: GM Counter ,Linear accelerator, cyclotron

PAPER-II, Feb -2017

I	BMT	**INTEGRAL TRANSFORMS** Convergence of Fourier series and transform.
II	PSK	**OPTOELECTRONICS** Opto-coupler. Optical fiber: Introduction, Types of Optical fibers (Single mode, Multi mode), Grading, Numerical aperture (derivation), Coherent bundle.
V	SSK	**ELECTRONICS** Op-Amp – Op-Amp symbol and polarity convention. Ideal op – Amp, Op-Amp as a inverter and non inverter, virtual ground and summing point.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-I, March 2016-17

UNIT	SYLLABUS TO BE COVERED
II	Super Conductivity: Introduction, Occurrence of super conductivity, and destruction of super conductivity by magnetic field. Meissner effect, Isotope Effect and applications.
III	NUCLEAR INSTRUMENTS: GM counter, scintillation counter, Linear accelerator and cyclotron. Problems
IV	Solar azimuthal angle, surface azimuthal angle Solar radiation measurement. Angstrom compensation Pyrhilometer, and Pyronometer.
V	**DIGITAL ELECTRONICS** Number System-Decimal, Binary, Hexadecimal and their inter conversion Boolean algebra, Truth tables, De Morgan's theorems. Designing of logic gates using NAND and NOR Gates. **SPECIAL MATERIALS** Introduction, Classification of liquid crystals, Display system, Introduction to Conducting polymers and applications.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

VI-SEM PAPER-II, March-2016-17

UNIT	SYLLABUS TO BE COVERED
IV	**Study of C-language:** Basic structure of C-Programming , tokens, keywords and identifiers, constants, variables, data types, decision control statement ,operators and expressions , loop control statements, decision making IF-ELSE statement for looping, case control statements.
II	Fiber Optical communication system (Block diagram with each block explanation). Problems
III	Classification of radio waves, Types of waves, propagation of radio waves through ionosphere (Qualitative), Critical frequency, Critical angle, Virtual height, Secant law, Modulation and Demodulation: Need for Modulation, Types of modulation, AM modulation, Block diagram of AM Transmitter, Significance of modulation factor, Frequency spectrum of AM and FM.,

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, AUGUST 2016 - 17 Date: 01- 08 -2016

UNIT	SYLLABUS TO BE COVERED
I	**LINEAR MOMENTUM** Concept of frames of reference. Laws of conservation of Linear Momentum for a System of particles. Elastic Collision between two particles in Laboratory and Center of Mass frames of references. Inelastic collision between two particles in Laboratory and Center of Mass frames of references (without derivation).
II	**ANGUALAR MOMENTUM FOR SYSTEM OF PARTICLES:** Derivation of velocity (orbital velocity and escape velocity) in Closed and Open orbiting a central field, Escape velocity of a satellite: stationary satellites, weightlessness.
III.	**RIGID BODY DYNAMICS;** Derivation of expression for moment of inertia of rectangular lamina.Thin Uniform rod, Circular disc. Qualitative discussion on Moment of Inertia of Annular ring.
IV	**ELASTICITY:** Poisson's Ratio, bending of beams, expression for bending Ratios, Expression for bending moment(derivation)
V	**SURFACE TENSION:** Expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method with relevant theory. Effect of temperature and impurity on surface tension. Example

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

III-SEM SEPTEMBER, 2016-17

UNIT	SYLLABUS TO BE COVRERED
I	**CARDINAL POINTS:** Location of Cardinal Points. Problems.
II	**ABERRATIONS:** Ramsden's and Huygen's eye-pieces: Construction and location of cardinal points. Problems. **DYNAMICS OF CHARGED PARTICLES:** Charged particles in a uniform (static) electric field applied along the direction of particle motion.
III	**DIELECTRICS:** Derivation of Clausius – Mosotti equation and its limitations. Experimental determination of dielectric constant of a solid. Problems.
IV	**TRANSIENT CIRCUITS:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit. Time constants of RL and RC circuits. LCR circuit (Discussion of special cases).
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Theory of earth inductor. Determination of BH, BV and Φ. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems.

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

I SEM, JUNE/JULY 2016-17

UNIT	SYLLABUS TO BE COVERED
I	**SHM** Differential equation of linear SHM. Energy of a particle, potential energy and kinetic energy (derivation), composition of two rectangular SHM's having same periods, Lissajous figures.Problems
II	**Angular momentum for system of particles:** Angular Momentum and torque, Conservation of angular momentum, central force,Kepler's Second Law(derivation). Spin, Orbital and Total Angular Momentum. Problems.
III.	**Rigid body dynamics** Moment of inertia and its physical significance. Derivation for theorems of momentof inertia. Derivation of expression for moment of inertia of rectangular lamina, thinUniform rod, Circular disc
IV	**Elasticity** Moduli of elasticity of isotropic materials and relation between three moduli of elasticity (derivation). Poisson's Ratio, bending of beams, expression for bendingRatio.
V	**Surface tension** Introduction to surface tension, derivations for Pressure difference across a curvedliquid surface

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MONTHLY TEACHING PLAN

III-SEM August, 2016-17

UNIT	SYLLABUS TO BE COVRERED
I	**CARDINAL POINTS:** Cardinal points of optical system: Principal foci, principal points and nodal points. Newton's formula and graphical construction of image. Equivalent focal length of two thin lenses separated by a distance (derivation
II	**ABERRATIONS:** Condition for Achromatism of two thin lenses in contact and separated by a distance. Ramsden's and Huygen's eye-pieces: Construction and location of cardinal points. Problems.
III	**DIELECTRICS:** Expression for mechanical stress on surface of charged conductor. Application to electrified soap bubble. Expression for electrostatic energy in a medium surrounding charged conductor.
IV	**CURRENT ELECTRICITY** Helmholtz Galvanometer: Principle, Construction and Working.(Problems). **TRANSIENT CURRENTS:** Theory of growth and decay of current through RL circuit. Theory of charging and discharging of capacitor through RC circuit.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Determination of self-inductance (L) by Rayleigh's method with necessary theory. Theory of earth inductor.

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MONTHLY TEACHING PLAN

III-SEM JUNE/JULY 2016-17

UNIT	SYLLABUS TO BE COVRERED
I	**GEOMETRICAL OPTICS:** Fermat's principle statement and explanation, derivation of laws of reflection and refraction. Abbe's sine rule (derivation).
II	**ABERRATIONS:** Spherical and chromatic aberrations. Methods to reduce spherical aberration (Qualitative) condition for Achromatism of two thin lenses in contact and separated by a distance.
III	**DIELECTRICS:** Electric polarization. Gauss law (vector form) in dielectrics and electric displacement. Boundary conditions at a surface separating two dielectric media (derivation).
IV	**CURRENT ELECTRICITY** Statement of Biot – Savart's Law, Derivation of expression for magnetic field due to a straight conductor carrying current, Mention of expression of variation of magnetic field along the axis of a circular coil and determination of BH. Helmholtz Galvanometer: Principle, Construction and Working.
V	**ELECTRICAL INSTRUMENTS AND MEASUREMENTS:** Ballistic galvanometer: Condition for moving coil galvanometer to be ballistic and dead beat. Theory of BG. Charge Sensitivity and current sensitivity and their relationship

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MONTHLY TEACHING PLAN

V-SEM PAPER-I, June/July 2016-17

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS :** Constraints, Types with example, Degrees of Freedom, Configuration Space, Principle of Virtual Work, Generalized Co-ordinates, Virtual displacement, Velocity, Force, Kinetic and Potential Energies (derivation)
II	Reduction of two body problem to equivalent one body problem. Expression for total energy of orbit (equivalent of single body) and Classification of Orbits. Kepler's Law of Planetary Motion and their derivation from Lagranges equation of motion.
III	**RELATIVITY:** Michelson – Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations equations (Derivation).
IV	**NETWORK THEOREMS:** Current and voltage sources , Superposition theorem, Thevinin's and Norton's Theorem Maximum power transfer Theorem (Derivation for all theorems).

V-SEM PAPER-II, June/July 2016-17

UNIT	SYLLABUS TO BE COVERED
I	**QUANTUM MECHANICS**: Compton effect – (qualitatively), Devission and Germer Experiment, de – Broglie Hypothesis G.P.Thomoson experiment, Uncertainty principle Statement, Illustration by Gamma – Ray Microscope.
IV	**MOLECULAR SPECTRA:** Spectra of diatomic molecules: Nature of Molecular spectrum, Different types of energies of a molecule, Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule.
V	**MATHEMATICAL PHYSICS:** Legendre functions: Lengender polynomials, Rodrigue's formula, generating functions and recursion relations

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MONTHLY TEACHING PLAN

V-SEM PAPER-I, August 2016-17

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle. Applications of Lagrange's equation of Motion. **a.** Motion of a Single Particle in Cartesian Co-ordinates.**b.** Harmonic Oscillator. Problems
III	**RELATIVITY** Relativity of Length andTime. Law of Addition of Velocities. Variation of Mass with Velocity. Mass EnergyRelation. Problems
V	**Transistor:** h-parameters of a transistor and their determination using CE configurationtransistor as CE amplifier with frequency response .Types of feedback, transfergain with feedback (derivation).

V-SEM PAPER-II, August 2016-17

UNIT	SYLLABUS TO BE COVERED
II	**WAVE MECHANICS:** Time independent Schrodinger's waveequation (derivation) Physical significance of wave function. Derivation ofexpression for energy of a particle in a box.
III	**ATOMIC SPECTRA** Vector atom model electron spin and quantization and quantumnumbers. Stern Gerlach experiments. Coupling scheme for single valance andtwo valance systems.
V	Orthogonality and normalization associated Legendre functions, spherical harmonics. **Bessel functions**: Bessel functions of the first kind, recursion relations,Orthogonality

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING PLAN

V-SEM PAPER-I, SEPTEMBER 2016 -17

UNIT	SYLLABUS TO BE COVERED
I	**CLASSICAL MECHANICS** D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion. **a.** Motion of a Single Particle in Cartesian Co-ordinates. **b.** Harmonic Oscillator. Problems
III/IV	**RELATIVITY** Variation of Mass with Velocity. Mass Energy Relation. Problems **Power supply** Unregulated bridge rectifier(efficiency, ripple factor, PIV ,TUF and Voltage regulation-qualiuatively.) Filters: capacitor filter, LC filter- section filter(study of wave forms qualitatively)
V	**Transistor:** Oscillators.-Transistor as an oscillator, comparison between amplifier and oscillator, Classification of oscillators-damped and undamped oscillators, the oscillatory circuit, frequency of oscillatory current, essentials of a feedback LC oscillator. Hartely and Phase shift oscillators.

V-SEM PAPER-II, September 2016-17

UNIT	SYLLABUS TO BE COVERED
II	**WAVE MECHANICS:** Eigen function and Eigen values. Linear harmonic oscillator with energy expression (derivation).Concept of zero point energy and degeneracy. Problems
III	**ATOMIC SPECTRA** Magnetic field effect on light- Magnetic moment of electron due to orbital motion. Larm or precession. Normal Zeeman effect-explanation of experimental setup Quantum theory of normal Zeeman effect. Energy level diagram for sodium D lines. Anomalous Zeeman effect (qualitative).
V	**Hermite fuctions:** Hermite polynomials, generating functions, recursion relations, orthogonality. Problems

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DEPARTMENT OF PHYSICS

MONTHLY TEACHING

V-SEM PAPER-I, OCTOBER 2016 -17

UNIT	SYLLABUS TO BE COVERED
IV	Analog Electronics: Zener diode: characteristics parameter, Explanation of Zener Breakdown. Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier. Problems
V	Transistor: FET- Types, characteristics and parameters. FET as a common source amplifier (Qualitative). Problems.

V-SEM PAPER-II, OCTOBER 2016-17

UNIT	SYLLABUS TO BE COVERED
I	LASER: Stimulated Absorption and Emission, Einstein A and B coefficients. Conditions for LASER action, Gas LASER He- Ne, Diode LASER, Characters and application of LASER. Problems
IV	RAMAN EFFECT: Raman Scattering. Experimental set up. Raman Spectrum, Explanation OF Raman effect on the basis of quantum theory. Application of Raman Effect. Problems

Coordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

Department of Geology

MONTHLY TEACHING PLAN 2020

B.Sc.I Sem

Month	TOPIC	Name of Staff Member
Sept 2020	Syllabus Discussion & Brain Storming sessions	All 3 staff
	DYNAMIC GEOLOGY: **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Interior of Earth:** Interpretation of interior of earth using seismic waves, Discontinuities (Concade, Mohorovicic, Repetti, Gutenberg and Lehman discontinuities). General description of Crust, Mantle and Core.	Dr.PT Hanamgond
	Origin and Age of Earth: Nebular- Planetesimal hypotheses; Big bang theory, cooling and consolidation of earth. Age of Earth (from history of organic evolution, sedimentation, salinity of sea water, rate of cooling & radioactive dating). **Geological Agents:** Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents:** Internal heat, Magmatic emanations, magma.	Prof.SS Mense
	Isostasy: Pratt's and Ary's hypotheses. Seafloor Spreading, Continental Drift Theory and Plate Tectonics: Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	Prof.YM Kutre
October	**Earthquake:** Definition – focus and epicenter. Seismic waves: body (P & S) and surface waves (Love & Rayleigh); Causes- non tectonic (volcanic, landslides, explosions) and tectonic: elastic rebound theory; classification based on depth of epicenter; intensity: Mercali and Richter scale; seismograph and seismogram; seismic belt of India; effects of earth quake & tsunami; and prediction of earthquakes.	Dr.PT Hanamgond
	Volcano: Definition – typical volcano. Classification of volcanoes: active, dormant and extinct. Types of eruptions: fissure and central eruptions. Products of volcano: liquid (lava), solid (cinder, lapilli, volcanic bombs, áá, ash) and Gases. Effects of volcano.	Prof.SS Mense
	GEOMORPHOLOGY Basic concepts of Geomorphology. **Weathering:** Definition, agents of weathering- Physical, Chemical and Biological. Physical weathering: frost action (wedging and heaving), thermal weathering- spheroidal weathering (exfoliation); action of gravity - scree, talus, Chemical weathering: Water as a chemical agent. Oxidation, hydration and carbonation. Biological weathering: Action of plants, animals and man. Products of weathering-formation and types of soil.	Prof.YM Kutre

November	**Coastal Processes:** Definition of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Fore dunes.	**Dr.PT Hanamgond**
	Wind : Geological action of wind- erosion, transportation and deposition Erosion and Erosional features- deflation- winnowing action, oasis, playas. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- millet seed sand. Transportation- Suspension, saltation, traction/rolling. Deposition a nd depositional features: sand dunes- longitudinal, transverse dunes, barchans and loess deposit.	**Prof.SS Mense**
	River: Origin of River. Stages of River: Initial stage, Youth stage - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting; canyon/gorge; pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan; and Old stage- base level of erosion, and delta. Geological action of River- erosion: hydraulic action- abrasion, attrition, corrosion; Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Prof.YM Kutre**
December	**Glacier:** Definition, snow field, snow line, neve/firn. Movement of glaciers, types of glaciers – valley glacier, piedmont glacier, ice sheet. Surface features: Crevasses, types of crevasses – bergshrund, longitudinal, transverse and marginal. Geological action of Glacier: erosion – abrasion, excavation/valley plucking, frost wedging and scraping; Erosional features- cirque/corrie, arête, horns, U-shape valley, hanging valley, rochesmoutonnee. Deposition – depositional features: moraines- lateral, medial, terminal/end, ground moraines, tillite, erratic/perched block. Glacio-fluvial deposits- Outwash plain, kettle hole, kames, drumlins, eskers.	**Dr.PT Hanamgond**
	FIELD GEOLOGY: **Geological Equipments:** Brief introduction to - Toposheet, Hammer, Hand lens, Clinometer and Brunton Compass, Global Positioning System.	**Prof.SS Mense**
	Geological Field Report: Aims and Objectives, Introduction, Study Area, Accessibility, Climate, Geology of the area, Methodology, Results, Discussions, Conclusion, Bibliography and Appendix.	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2020

B.Sc.III Sem

Month	TOPIC	Name of Staff Member
August 2020	Syllabus Discussion & Brain Storming sessions	All Staff
	Introduction- Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	Dr.PT Hanamgond
	Metamorphic Petrology: **Introduction**: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	Prof.SS Mense
	Igneous Petrology: **Magma**- Definition, Assimilation, Differentiation and Crystallization. Composition- acidic and basic magma. Mode of occurrence of igneous rocks: Intrusive and extrusive igneous rocks.	Prof.VM Kutre
September	**Sedimentary Petrology:** **Introduction**: Weathering, transportation, deposition, lithification and diagenesis.	Dr.PT Hanamgond
	Types of metamorphism with brief descriptions: Cataclastic, thermal, dynamothermal, plutonic metamorphism. **Metasomatism**- Neosome and Metasomen, Migmatites.	Prof.SS Mense
	Forms of Igneous rocks- Concordant – sill and lacolith; Discordant – dyke and batholith. **Structures of Igneous rocks** – Vesicular, Amygdaloidal, Flow, Pillow, Ropy and Columnar.	Prof.VM Kutre
October	**Structures of sedimentary rocks**: stratification, lamination, graded bedding, cross/ current bedding, ripple marks, mud cracks/sun cracks, rain prints and oolitic. **Textures of sedimentary rocks**: Clastic and non clastic. Wentworth grain size classification. Sphericity and roundness.	Dr.PT Hanamgond
	Textures and Structures in Metamorphic rocks: Crystalloblastic, palimpsest. Cataclastic, granuloar, gneissose and schistose.	Prof.SS Mense
	Textures in igneous rocks: Definition. Crystallinity, granularity, shape of the crystal, mutual relationship. **Equigranular texture**: Panidiomorphic, hypidiomorphic, allotriomorphic; **Inequigranular texture**: Porphyritic, poikilitic, ophitic/subophitic, basaltic (intersertal-intergranular); **Intergrowth texture**: graphic. **Directive structure**: Flow/trachytic. Other textures – Myrmekitic, Corona/reaction rim and Perthitic.	Prof.VM Kutre
November	**Classification of sedimentary rocks**: Based on origin: Clastic/mechanical deposits and Non clastic deposits - residual, evaporites and non-evaporates/chemical and organic deposits; based on grain size- Rudaceous, arenaceous and argillaceous.	Dr.PT Hanamgond
	Metamorphic Facies: Facies Concept and zones. Eskola's facies	Prof.SS Mense
	Classification of igneous rocks: Chemical classification- CIPW, Shand and Holmes, based on silica content (acidic, basic, intermediate and ultrabasic). Mineralogical classification- color index (leucocratic/felsic and melenocratic/mafic); Mineral content in rock: essential, accessory and secondary minerals. **Bowens Reaction Series** – Discontinuous and Continuous	Prof.VM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2020

B.Sc. V Sem

Month	TOPIC	Name of Staff Member
August 2020	Syllabus Discussion & Brain Storming sessions	All Staff
	PAPER I: STRUCTURAL GEOLOGY: Introduction: Stress, Strain, Rock deformation (brittle, plastic & elastic). Attitude of beds, Brunton compass and its uses. Outcrop: Definition, width and thickness, factors controlling the width of outcrop, Outlier and inliers. **PAPER II: Sedimentation** Deposits: Precipitation from carbonate solution; precipitation in oxidizing environment. Features of sedimentary ore deposits. Banded Iron Formation (BIF).	Dr.PT Hanamgond
	PAPER II Ore processes: Introduction, syngenetic and epigenetic deposits. Controls of ore deposition – Structural, stratigraphic, physical and chemical. **Magmatic concentration**: Early (dissemination, segregation, injection) and late magmatic (residual liquid segregation and injection; and immiscible liquid segregation and injection), Sublimation. Metamorphism and Contact metasomatism deposits. **Paper I Geophysics: Introduction:** Earth's magnetic and gravitational fields.	Prof.SS Mensc
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II: INDIAN MINERAL DEPOSITS: Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and nonmetallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India.	Prof.YM Kutre
September	**PAPER I:** Conformity and unconformity, types of unconformities- angular, disconformity, blended, non conformity, regional and local unconformity. Recognition of unconformity in the field.	Dr.PT Hanamgond
	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, crustification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits. **Paper I Geophysics:** General principles and applications of - Magnetic methods, gravity method, electrical methods (direct current resistivity methods), vertical electrical soundings. Interpretation of resistivity curves.	Prof.SS Mensc
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes). - Advantages and limitations.	Prof.YM Kutre

October	**PAPER I:** Joints: definition, classification- geometric: strike, dip, oblique and bedding joints. genetic – columnar, feather, extension and release, sheeting, riff and grain. Significance of joints. Folds: definition, parts of fold- limb, hinge, axis, axial plane and plunge. Types of folds- Symmetrical, asymmetrical, anticline, syncline, over turned, isoclinals, recumbent, chevron, drag, monoclinal fold. Recognition of folds in the field.	**Dr.PT Hanamgond**
	PAPER II: Residual deposits- lateritisation and bauxitisation. **Evaporites-** salt deposits **Mechanical concentration deposits** – alluvial, eluvial, eolian and beach placers (detrital/heavy minerals). **Paper II - Geochemistry:** Introduction: Structure and atomic properties of elements. The Periodic Table. Goldschmidt's classification of the elements and distribution in the Earth – Lithophile, Siderophile, Chalcophile & Atmophile.	**Prof.SS Mense**
	PAPER II: Metallic: Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals. **Paper I Geophysics:** Seismic method – Reflection and Refraction.	**Prof.VM Kutre**
November	**PAPER I:** Faults: definition, terminology- fault plane, hanging wall and foot wall, dip and hade, throw and heave. Nature of movement- translation and rotational, relative movements- Slip, strike slip, dip slip and net slip; **Classification of Faults:** Geometric – strike fault, dip fault, oblique fault; based on apparent movement – normal and reverse fault. Genetic- thrust, gravity, graben, step, ridge and trough faults. Recognition of faults in the field.	**Dr.PT Hanamgond**
	PAPER II: Oxidation and supergene enrichment- Gossan, Zone of oxidation, supergene enrichment zone and Primary zone. Evaporites – Salt deposits **Paper II - Geochemistry**: Geochemical Cycle and Stability of Minerals.	**Prof.SS Mense**
	Non Metallic: Origin of Coal, types of coal, uses and its distribution in India. Origin of Petroleum, Migration, accumulation, uses and its distribution in India	**Prof.VM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2019

B.Sc.I Sem

Month	TOPIC	Name of Staff Member
17 – 30 June 2019	Syllabus Discussion & Brain Storming sessions	
July 2019	**DYNAMIC GEOLOGY:** **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Origin of Earth**: Nebular– Planetesimal hypotheses, Big bang theory, cooling and consolidation of earth **Interior of Earth:** Interpretation of interior of earth using seismic waves, Mohorovicic and Gutenberg discontinuities. General description of Crust, Mantle and Core.	**Dr.PT Hanamgond**
	Geological Agents: Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents**. Internal heat, Magmatic emanations, magma.	**Prof.SS Mense**
	Isostasy: Pratt's and Ary's hypotheses. **Seafloor Spreading, Continental Drift Theory and Plate Tectonics:** Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	**Prof.YM Katre**
August	**River**: Origin of River. **Stages of River**: Initial stage, Youth stage - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting; canyon/gorge; pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan; and Old stage- base level of erosion, and delta. **Geological action of River**- erosion: hydraulic action- abrasion, attrition, corrosion; Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Dr.PT Hanamgond**
	Weathering: Definition, agents of weathering- Physical, Chemical and Biological. **Physical weathering**: frost action (wedging and heaving); thermal weathering- spheroidal weathering (exfoliation); action of gravity- scree, talus, **Chemical weathering:** Water as a chemical agent. Oxidation, hydration and carbonation. **Biological weathering**: Action of plants, animals and man. Products of weathering- formation and types of soil.	**Prof.SS Mense**
	Wind : Geological action of wind- erosion, transportation and deposition **Erosion and Erosional features**- deflation- winnowing action, oasis, playas. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- millet seed sand. **Transportation**- Suspension, saltation, traction/rolling. **Deposition and depositional features**: sand dunes- longitudinal, transverse dunes, barchans and loess deposit.	**Prof.YM Katre**

September	**Coastal Processes: Definition** of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Fore dunes.	**Dr.PT Hanamgond**
	Volcano: Definition – typical volcano. Classification of volcanoes: active, dormant and extinct. **Types of eruptions**: fissure and central eruptions. **Products of volcano**: liquid (lava), solid (cinder, lapilli, volcanic bombs, áá, ash) and Gases. Effects of volcano.	**Prof.SS Mense**
	Glacier: Definition, snow field, snow line, neve/firn. Movement of glaciers, types of glaciers – valley glacier, piedmont glacier, ice sheet. **Surface features:** Crevasses, types of crevasses – bergshrund, longitudinal, transverse and marginal. **Geological action of Glacier:** erosion – abrasion, excavation/valley plucking, frost wedging and scraping; Erosional features- cirque/corrie, arête, horns, U-shape valley, hanging valley, rochesmoutonnee. **Deposition** – depositional features: moraines- lateral, medial, terminal/end, ground moraines, tillite, erratic/perched block. **Glacio-fluvial deposits**- Outwash plain, kettle hole, kames, drumlins, eskers.	**Prof.VM Kutre**
October	**Earthquake:** Definition – focus and epicenter. Seismic waves: body (P & S) and surface waves (Love & Rayleigh); Causes- non tectonic (volcanic, landslides, explosions) and tectonic: elastic rebound theory; classification based on depth of **epicenter; intensity: Mercalli and Richter scale**; seismograph and seismogram; seismic belt of India; effects of earth quake & tsunami; and prediction of earthquakes.	**Dr.PT Hanamgond**
	CRYSTALLOGRAPHY: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles. Euler's law. Interfacial angle, Contact Goniometer and its use. Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices. Study of crystal forms of normal classes of all six crystal systems- 1) Isometric, 2) Tetragonal, 3) Trigonal, 4) Hexagonal, 5) Orthorhombic, 6) Monoclinic and 7) Triclinic.	**Prof.SS Mense**
	FIELD GEOLOGY: **Geological Equipments:** Brief introduction to - Toposheet, Hammer, Hand lens, Clinometer and Brunton Compass. Global Positioning System. **Geological Field Report:** Aims and Objectives, Introduction, Study Area, Accessibility, Climate, Geology of the area, Methodology, Results, Discussions, Conclusion, Bibliography and Appendix.	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2019

B.Sc.III Sem

Month	TOPIC	Name of Staff Member
17 – 30 June 2019	Syllabus Discussion & Brain Storming sessions	
July 2019	**Introduction**- Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	Dr.PT Hanamgond
	Metamorphic Petrology: **Introduction**: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	Prof.SS Mense
	Igneous Petrology: **Magma**- Definition, Assimilation, Differentiation and Crystallization. Composition- acidic and basic magma. Mode of occurrence of igneous rocks: Intrusive and extrusive igneous rocks.	Prof.YM Kutre
August	**Sedimentary Petrology:** **Introduction**: Weathering, transportation, deposition, lithification and diagenesis.	Dr.PT Hanamgond
	Types of metamorphism with brief descriptions: Cataclastic, thermal, dynamothermal, plutonic metamorphism. **Metasomatism**: Neosome and Metasomes, Migmatites.	Prof.SS Mense
	Forms of Igneous rocks- Concordant – sill and lacolith; Discordant – dyke and batholith. **Structures of Igneous rocks** – Vesicular, Amygdaloidal, Flow, Pillow, Ropy and Columnar.	Prof.YM Kutre
September	**Structures of sedimentary rocks**: stratification, lamination, graded bedding, cross/ current bedding, ripple marks, mud cracks/sun cracks, rain prints and oolitic. **Textures of sedimentary rocks**: Clastic and non clastic. Wentworth grain size classification. Sphericity and roundness.	Dr.PT Hanamgond
	Textures and Structures in Metamorphic rocks: Crystalloblastic, palimpsest. Cataclastic, granulose, gneissose and schistose.	Prof.SS Mense
	Textures in igneous rocks: Definition. Crystallinity, granularity, shape of the crystal, mutual relationship **Equigranular texture**: Panidiomorphic, hypidiomorphic, allotriomorphic; **Inequigranular texture:** Porphyritic, poikilitic, ophitic/subophitic, banatic (interstertal-intergranular); **Intergrowth texture: graphic. Directive structure**: Flow/trachytic. Other textures – Myrmekitic, Corona/reaction rim and Perthitic.	Prof.YM Kutre
October	**Classification of sedimentary rocks**: Based on origin: Clastic/mechanical deposits and Non clastic deposits - residual, evaporites and non-evaporates/chemical and organic deposits; based on grain size- Rudaceous, arenaceous and argillaceous.	Dr.PT Hanamgond
	Metamorphic Facies: Facies Concept and zones. Eskola's facies	Prof.SS Mense
	Classification of igneous rocks: Chemical classification- CIPW, Shand and Holmes, based on silica content (acidic, basic, intermediate and ultrabasic). Mineralogical classification- color index (leucocratic/felsic and melanocratic/mafic); Mineral content in rock: essential, accessory and secondary minerals. **Bowens Reaction Series** – Discontinuous and Continuous	Prof.YM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2019

B.Sc. V Sem

Month	TOPIC	Name of Staff Member
17 – 30 June 2019	Syllabus Discussion & Brain Storming sessions	
July 2018	**PAPER I: STRUCTURAL GEOLOGY: Introduction:** Stress, Strain, Rock deformation (brittle, plastic & elastic). Attitude of beds, Brunton compass and its uses. Outcrop: Definition, width and thickness, factors controlling the width of outcrop, Outlier and inliers. **PAPER II: Sedimentation** Deposits: Precipitation from carbonate solution; precipitation in oxidizing environment. Features of sedimentary ore deposits. Banded Iron Formation (BIF).	**Dr.PT Hanamgond**
	PAPER II Ore processes: Introduction, syngenetic and epigenetic deposits. Controls of ore deposition – Structural, stratigraphic, physical and chemical. **Magmatic concentration**: Early (dissemination, segregation, injection) and late magmatic (residual liquid segregation and injection; and immiscible liquid segregation and injection), Sublimation. Metamorphism and Contact metasomatism deposits.	**Prof.SS Mense**
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II: INDIAN MINERAL DEPOSITS: Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and non metallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India.	**Prof.VM Kutre**
	Paper I Geophysics: Introduction: Earth's magnetic and gravitational fields.	
August	**PAPER I:** Conformity and unconformity, types of unconformities- angular, disconformity, blended, non conformity, regional and local unconformity. Recognition of unconformity in the field.	**Dr.PT Hanamgond**
	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, crustification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits. **Paper I Geophysics:** General principles and applications of - Magnetic methods, gravity method, electrical methods (direct current resistivity methods), vertical electrical soundings. Interpretation of resistivity curves.	**Prof.SS Mense**
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes), - Advantages and limitations.	**Prof.VM Kutre**

September	**PAPER I:** Joints: definition, classification- geometric: strike, dip, oblique and bedding joints, genetic – columnar, feather, extension and release, sheeting, rift and grain. Significance of joints. Folds: definition, parts of fold- limb, hinge, axis, axial plane and plunge. Types of folds- Symmetrical, asymmetrical, anticline, syncline, over turned, isoclinals, recumbent, chevron, drag, monoclinal fold. Recognition of folds in the field.	**Dr.PT Hanamgond**
	PAPER II: Residual deposits- lateritisation and bauxitisation. **Evaporites**- salt deposits **Mechanical concentration deposits** – alluvial, eluvial, eolian and beach placers (detrital/heavy minerals). **Paper II - Geochemistry:** Introduction: Structure and atomic properties of elements. The Periodic Table. Goldschmidt's classification of the elements and distribution in the Earth – Lithophile, Siderophile, Chalcophile & Atmophile.	**Prof.SS Menn**
	PAPER II: Metallic: Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals. **Paper I Geophysics:** Seismic method – Reflection and Refraction.	**Prof.YM Kutre**
October	**PAPER I:** Faults: definition, terminology- fault plane, hanging wall and foot wall, dip and lude, throw and heave. Nature of movement- translation and rotational, relative movements- Slip, strike slip, dip slip and net slip; **Classification of Faults:** Geometric – strike fault, dip fault, oblique fault; based on apparent movement – normal and reverse fault. Genetic- thrust, gravity, graben, step, ridge and trough faults. Recognition of faults in the field.	**Dr.PT Hanamgond**
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	Non Metallic: Origin of Coal, types of coal, uses and its distribution in India. Origin of Petroleum, Migration, accumulation, uses and its distribution in India	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2018

B.Sc.I Sem

Month	TOPIC	Name of Staff Member
25 -30 June 2018	Syllabus Discussion & Brain Storming sessions	
July 2018	**DYNAMIC GEOLOGY:** **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Origin of Earth**: Nebular-- Planetesimal hypotheses; Big bang theory, cooling and consolidation of earth **Interior of Earth:** Interpretation of interior of earth using seismic waves, Mohorovicic and Gutenberg discontinuities. General description of Crust, Mantle and Core.	**Dr.PT Hanamgond**
	Geological Agents: Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents**: Internal heat. Magmatic emanations, magma.	**Prof.SS Menso**
	Isostasy: Pratt's and Ary's hypotheses. **Seafloor Spreading, Continental Drift Theory and Plate Tectonics:** Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	**Prof.YM Kutre**
August	**Coastal Processes: Definition** of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Fore dunes.	**Dr.PT Hanamgond**
	Weathering: Definition, agents of weathering- Physical, Chemical and Biological. **Physical weathering:** frost action (wedging and heaving); thermal weathering- spheroidal weathering (exfoliation); action of gravity- scree, talus, **Chemical weathering:** Water as a chemical agent: Oxidation, hydration and carbonation. **Biological weathering**: Action of plants, animals and man. Products of weathering- formation and types of soil.	**Prof.SS Menso**
	Wind : Geological action of wind- erosion, transportation and deposition. **Erosion and Erosional features**- deflation- winnowing action, oasis, playas. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- millet seed sand. **Transportation**- Suspension, saltation, traction/rolling. **Deposition a nd depositional features**: sand dunes- longitudinal, transverse dunes, barchans and loess deposit.	**Prof.YM Kutre**

September	**River**: Origin of River. **Stages of River**: Initial stage, Youth stage - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting, canyon/gorge, pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan; and Old stage- base level of erosion, and delta. **Geological action of River**- erosion: hydraulic action- abrasion, attrition, corrosion; Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Dr.PT Hanamgond**
	Volcano: Definition – typical volcano. Classification of volcanoes: active, dormant and extinct. **Types of eruptions**: fissure and central eruptions. **Products of volcano**: liquid (lava), solid (cinder, lapilli, volcanic bombs, aā, ash) and Gases. Effects of volcano.	**Prof.SS Mense**
	Glacier: Definition, snow field, snow line, neve/firn. Movement of glaciers, types of glaciers – valley glacier, piedmont glacier, ice sheet. **Surface features:** Crevasses, types of crevasses – bergschrund, longitudinal, transverse and marginal. **Geological action of Glacier:** erosion – abrasion, excavation/valley plucking, frost wedging and scraping: Erosional features- cirque/corrie, arête, horns, U-shape valley, hanging valley, rochemoutonnee. **Deposition** – depositional features: moraines- lateral, medial, terminal/end, ground moraines, tillite, erratic/perched block. **Glacio-fluvial deposits** Outwash plain, kettle hole, kames, drumlins, eskers.	**Prof.YM Kutre**
October	**Earthquake:** Definition – focus and epicentre. Seismic waves: body (P & S) and surface waves (Love & Rayleigh); Causes- non tectonic (volcanic, landslides, explosions) and tectonic: elastic rebound theory; classification based on depth of epicenter; intensity: Mercali and Richter scale; seismograph and seismogram; seismic belt of India; effects of earth quake & tsunami; and prediction of earthquakes.	**Dr.PT Hanamgond**
	CRYSTALLOGRAPHY: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles, Euler's law. Interfacial angle, Contact Goniometer and its use. Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices. Study of crystal forms of normal classes of all six crystal systems- 1) Isometric, 2) Tetragonal, 3) Trigonal, 4) Hexagonal, 5) Orthorhombic, 6) Monoclinic and 7) Triclinic.	**Prof.SS Mense**
	FIELD GEOLOGY: **Geological Equipments:** Brief introduction to - Toposheet, Hammer, Hand lens, Clinometer and Brunton Compass. Global Positioning System. **Geological Field Report:** Aims and Objectives, Introduction, Study Area, Accessibility, Climate, Geology of the area, Methodology, Results, Discussions, Conclusion, Bibliography and Appendix.	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2018

B.Sc.III Sem

Month	TOPIC	Name of Staff Member
25 – 30 June 2018	Syllabus Discussion & Brain Storming sessions	
July 2018	**Introduction**- Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	**Dr.PT Hanamgond**
	Metamorphic Petrology: **Introduction**: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	**Prof.SS Mense**
	Igneous Petrology: **Magma**- Definition, Assimilation, Differentiation and Crystallization. Composition- acidic and basic magma. Mode of occurrence of igneous rocks: Intrusive and extrusive igneous rocks.	**Prof.YM Kutre**
August	**Sedimentary Petrology:** **Introduction**: Weathering, transportation, deposition, lithification and diagenesis.	**Dr.PT Hanamgond**
	Types of metamorphism with brief descriptions: Cataclastic, thermal, dynamothermal, plutonic metamorphism. **Metasomatism**- Neosome and Metasomes, Migmatites.	**Prof.SS Mense**
	Forms of Igneous rocks- Concordant – sill and laccolith; Discordant – dyke and batholith. **Structures of Igneous rocks** – Vesicular, Amygdaloidal, Flow, Pillow, Ropy and Columnar.	**Prof.YM Kutre**
September	**Structures of sedimentary rocks**: stratification, lamination, graded bedding, cross/ current bedding, ripple marks, mud cracks/sun cracks, rain prints and oolitic. **Textures of sedimentary rocks**: Clastic and non clastic. Wentworth grain size classification. Sphericity and roundness.	**Dr.PT Hanamgond**
	Textures and Structures in Metamorphic rocks: Crystalloblastic, palimpsest. Cataclastic, granulose, gneissose and schistose.	**Prof.SS Mense**
	Textures in Igneous rocks: Definition. Crystallinity, granularity, shape of the crystal, mutual relationship **Equigranular texture**: Panidiomorphic, hypidiomorphic, allotriomorphic; **Inequigranular texture:** Porphyritic, poikilitic, ophitic/subophitic, basaltic (intersertal-intergranular); **Intergrowth texture:** graphic, **Directive structure**: Flow/fracture. Other textures – Myrmekitic, Corona/reaction rim and Perthitic.	**Prof.YM Kutre**
October	**Classification of sedimentary rocks**: Based on origin: Clastic/mechanical deposits and Non clastic deposits - residual, evaporites and non-evaporites/chemical and organic deposits; based on grain size- Rudaceous, arenaceous and argillaceous.	**Dr.PT Hanamgond**
	Metamorphic Facies: Facies Concept and zones. Eskola's facies	**Prof.SS Mense**
	Classification of igneous rocks: Classical classification- CIPW, Shand and Holmes, based on silica content (acidic, basic, intermediate and ultrabasic). Mineralogical classification- color index (leucocratic/felsic and melanocratic/mafic); Mineral content in rock: essential, accessory and secondary minerals. **Bowens Reaction Series** – Discontinuous and Continuous	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2018

B.Sc. V Sem

Month	TOPIC	Name of Staff Member
25 – 30 June 2018	Syllabus Discussion & Brain Storming sessions	
July 2018	**PAPER I: STRUCTURAL GEOLOGY: Introduction:** Stress, Strain, Rock deformation (brittle, plastic & elastic). Attitude of beds, Brunton compass and its uses. Outcrop: Definition, width and thickness, factors controlling the width of outcrop, Outlier and inliers. **PAPER II: Sedimentation** Deposits: Precipitation from carbonate solution; precipitation in oxidizing environment. Features of sedimentary ore deposits. Banded Iron Formation (BIF).	**Dr.PT Hanamgoud**
	PAPER II: Introduction, syngenetic and epigenetic deposits. Controls of ore deposition – Structural, stratigraphic, physical and chemical. **Magmatic concentration**: Early (dissemination, segregation, injection) and late magmatic (residual liquid segregation and injection; and immiscible liquid segregation and injection), Sublimation. Metamorphism and Contact metsomatism deposits.	**Prof.SS Mense**
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II:** INDIAN MINERAL DEPOSITS: **Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and non metallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India.	**Prof.YM Kutre**
August	**PAPER I:** Conformity and unconformity, types of unconformities- angular, disconformity, blended, non conformity, regional and local unconformity. Recognition of unconformity in the field.	**Dr.PT Hanamgoud**
	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, crustification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits.	**Prof.SS Mense**
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes), - Advantages and limitations.	**Prof.YM Kutre**

September	**PAPER I:** Joints: definition, classification- geometric: strike, dip, oblique and bedding joints. genetic – columnar, feather, extension and release, sheeting, rift and grain. Significance of joints. Folds: definition, parts of fold- limb, hinge, axis, axial plane and plunge. Types of folds- Symmetrical, asymmetrical, anticline, syncline, over turned, isoclinals, recumbent, chevron, drag, monoclinal fold. Recognition of folds in the field.	**Dr.PT Hanamgoud**
	PAPER II: Residual deposits- lateritisation and bauxitisation. **Evaporites-** salt deposits **Mechanical concentration deposits –** alluvial, eluvial, eolian and beach placers (detrital/heavy minerals).	**Prof.SS Mense**
	PAPER II: Metallic: Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals.	**Prof.YM Kutre**
October	**PAPER I:** Faults: definition, terminology- fault plane, hanging wall and foot wall, dip and hade, throw and heave. Nature of movement- translation and rotational, relative movements- Slip, strike slip, dip slip and net slip; **Classification of Faults:** Geometric – strike fault, dip fault, oblique fault; based on apparent movement – normal and reverse fault. Genetic- thrust, gravity, graben, step, ridge and trough faults. Recognition of faults in the field.	**Dr.PT Hanamgoud**
	PAPER II: Oxidation and supergene enrichment- Gossan, Zone of oxidation, supergene enrichment zone and Primary zone.	**Prof.SS Mense**
	Non Metallic: Origin of Coal, types of coal, uses and its distribution in India. Origin of Petroleum, Migration, accumulation, uses and its distribution in India	**Prof.YM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2017
B.Sc.I Sem

Month	TOPIC	Name of Staff Member
June 2017	Syllabus Discussion	
July	**DYNAMIC GEOLOGY:** **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Origin of Earth:** Nebular~ Planetesimal hypotheses; Big bang theory, cooling and consolidation of earth **Interior of Earth:** Interpretation of interior of earth using seismic waves, Mohorovicic and Gutenberg discontinuities. General description of Crust, Mantle and Core.	Dr.PT Hanamgond
	Geological Agents: Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents:** Internal heat, Magmatic emanations, magma.	Prof.SS Mense
	Isostasy: Pratt's and Ary's hypotheses. **Seafloor Spreading, Continental Drift Theory and Plate Tectonics:** Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	Prof.YM Kutre
August	**Coastal Processes: Definition** of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Fore dunes.	Dr.PT Hanamgond
	Weathering: Definition, agents of weathering- Physical, Chemical and Biological. **Physical weathering:** frost action (wedging and heaving); thermal weathering- spheroidal weathering (exfoliation); action of gravity- scree, talus, **Chemical weathering:** Water as a chemical agent. Oxidation, hydration and carbonation. **Biological weathering:** Action of plants, animals and man. Products of weathering-formation and types of soil.	Prof.SS Mense
	Wind : Geological action of wind- erosion, transportation and deposition **Erosion and Erosional features**- deflation- winnowing action, oasis, playas. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- millet seed sand **Transportation**: Suspension, saltation, traction/rolling. **Deposition a nd depositional features**: sand dunes- longitudinal, transverse dunes, barchans and loess deposit.	Prof.YM Kutre

September	**River**: Origin of River. **Stages of River**: Initial stage, Youth stage - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting, canyon/gorge, pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan, and Old stage- base level of erosion, and delta. **Geological action of River**- erosion: hydraulic action- abrasion, attrition, corrosion, Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Dr.PT Hanamgoud**
	Volcano: Definition – typical volcano. Classification of volcanoes: active, dormant and extinct. **Types of eruptions**: fissure and central eruptions. **Products of volcano**: liquid (lava), solid (cinder, lapilli, volcanic bombs, aa, ash) and Gases. Effects of volcano.	**Prof.SS Menn**
	Glacier: Definition, snow field, snow line, neve/firn. **Movement of glaciers**, types of glaciers – valley glacier, piedmont glacier, ice sheet. **Surface features:** Crevasses, types of crevasses – bergschrund, longitudinal, transverse and marginal. **Geological action of Glacier:** erosion – abrasion, excavation/valley plucking, frost wedging and scraping; Erosional features- cirque/corrie, arête, horns, U-shape valley, hanging valley, rochesmoutonnee. **Deposition** – depositional features: moraines- lateral, medial, terminal/end, ground moraines, tillite, erratic/perched block. **Glacio-fluvial deposits**- Outwash plain, kettle hole, kames, drumlins, eskers.	**Prof.YM Kutre**
October	**Earthquake**: Definition – focus and epicenter. Seismic waves: body (P & S) and surface waves (Love & Rayleigh); Causes- non tectonic (volcanic, landslides, explosions) and tectonic: elastic rebound theory; classification based on depth of epicenter, intensity: Mercali and Richter scale; seismograph and seismogram, seismic belt of India; effects of earth quake & tsunami; and prediction of earthquakes.	**Dr.PT Hanamgoud**
	CRYSTALLOGRAPHY: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles, Euler's law. Interfacial angle, Contact Goniometer and its use. Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices.	**Prof.SS Menn**
	Study of crystal forms of normal classes of all six crystal systems- 1) Isometric, 2) Tetragonal, 3) Trigonal, 4) Hexagonal, 5) Orthorhombic, 6) Monoclinic and 7) Triclinic.	**Prof.YM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2017
B.Sc.III Sem

Month	TOPIC	Name of Staff Member
June 2017	Syllabus Discussion & Brain Storming sessions.	
July	**Introduction**: Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	Dr.PT Hanamgond
	Metamorphic Petrology: Introduction: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	Prof.SS Mense
	Igneous Petrology: Magma- Definition, Assimilation, Differentiation and Crystallization. Composition- acidic and basic magma. Mode of occurrence of igneous rocks: Intrusive and extrusive igneous rocks.	Prof.YM Kutre
August	**Sedimentary Petrology: Introduction**: Weathering, transportation, deposition, lithification and diagenesis.	Dr.PT Hanamgond
	Types of metamorphism with brief descriptions: Cataclastic, thermal, dynamothermal, plutonic metamorphism. **Metasomatism**- Neosome and Metasomes, Migmatites.	Prof.SS Mense
	Forms of Igneous rocks: Concordant – sill and laccolith; Discordant – dyke and batholith. **Structures of Igneous rocks** – Vesicular, Amygdaloidal, Flow, Pillow, Ropy and Columnar.	Prof.YM Kutre
September	**Structures of sedimentary rocks**: stratification, lamination, graded bedding, cross/ current bedding, ripple marks, mud cracks/sun cracks, rain prints and oolitic. **Textures of sedimentary rocks**: Clastic and non clastic. Wentworth grain size classification. Sphericity and roundness.	Dr.P T Hanamgond
	Textures and Structures in Metamorphic rocks: Crystalloblastic, palimpsest. Cataclastic, granulose, granoblastic and schistose.	Prof.SS Mense
	Textures in igneous rocks: Definition. Crystallinity, granularity, shape of the crystal, mutual relationship. **Equigranular texture**: Panidiomorphic, hypidiomorphic, allotriomorphic; **Inequigranular texture:** Porphyritic, poikilitic, ophitic/subophitic, basaltic (intersertal-intergranular); **Intergrowth texture: graphic. Directive structure**: Flow/trachytic. Other textures – Myrmekitic, Corona/reaction rim and Perthitic.	Prof.YM Kutre
October	**Classification of sedimentary rocks**: Based on origin: Clastic/mechanical deposits and Non clastic deposits - residual, evaporites and non evaporates/chemical and organic deposits; based on grain size- Rudaceous, arenaceous and argillaceous. ENVIRONMENTAL GEOLOGY: Definition of ecology and environmental geology, man and environment.	Dr.PT Hanamgond
	Metamorphic Facies: Facies Concept and zones. Eskola's facies. **Hazards:** Definition, types of hazards- natural (volcano, earthquake, tsunami, landslide, cyclone and flood) and manmade hazards (soil erosion, coastal erosion). Hazard/disaster management – hazard zoning maps, risk assessment.	Prof.SS Mense
	Classification of igneous rocks: Chemical classification- CIPW, Shand and Holmes, based on silica content (acidic, basic, intermediate and ultrabasic). Mineralogical classification- color index (leucocratic/felsic and melanocratic/mafic); Mineral content in rock: essential, accessory and secondary minerals. **Bowens Reaction Series** – Discontinuous and Continuous. Pollution- air, water and soil pollution.	Prof.YM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2017

B.Sc. V Sem

Month	TOPIC	Name of Staff Member
June 2017	Syllabus Discussion	
July	**PAPER I: STRUCTURAL GEOLOGY: Introduction:** Stress, Strain, Rock deformation (brittle, plastic & elastic). Attitude of beds, Brunton compass and its uses. Outcrop: Definition, width and thickness, factors controlling the width of outcrop, Outlier and inliers. **PAPER II: ORE PROCESSES: Sedimentation** Deposits: Precipitation from carbonate solution; precipitation in oxidizing environment. Features of sedimentary ore deposits. Bandad Iron Formation (BIF).	**Dr.PT Hanamgond**
	PAPER II: Introduction, syngenetic and epigenetic deposits. Controls of ore deposition – Structural, stratigraphic, physical and chemical. **Magmatic concentration**: Early (dissemination, segregation, injection) and late magmatic (residual liquid segregation and injection; and immiscible liquid segregation and injection), Sublimation. Metamorphisam and Contact metamatism deposits.	**Prof.SS Mense**
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II: INDIAN MINERAL DEPOSITS. Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and non metallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India.	**Prof.YM Kutre**
August	**PAPER I:** Conformity and unconformity, types of unconformities- angular, disconformity, blended, non conformity, regional and local unconformity. Recognition of unconformity in the field.	**Dr.PT Hanamgond**
	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, crustification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits.	**Prof.SS Mense**
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes), - Advantages and limitations.	**Prof.YM Kutre**

September	**PAPER I:** Joints: definition, classification- geometric: strike, dip, oblique and bedding joints. genetic – columnar, feather, extension and release, sheeting, rift and grain. Significance of joints. Folds: definition, parts of fold- limb, hinge, axis, axial plane and plunge. Types of folds- Symmetrical, asymmetrical, anticline, syncline, over turned, isoclinals, recumbent, chevron, drag, monoclinal fold. Recognition of folds in the field.	**Dr.PT Hanamgoud**
	PAPER II: Residual deposits- lateritisation and bauxitisation. **Evaporites-** salt deposits **Mechanical concentration deposits** – **alluvial, eluvial, eolian and beach placers (detrital/heavy** minerals)	**Prof.SS Mense**
	PAPER II: Metallic: Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals.	**Prof.YM Kutre**
October	**PAPER I:** Faults: definition, terminology- fault plane, hanging wall and foot wall, dip and hade, throw and heave. Nature of movement- translation and rotational, relative movements- Slip, strike slip, dip slip and net slip; **Classification of Faults:** Geometric – strike fault, dip fault, oblique fault; based on apparent movement – normal and reverse fault. Genetic- thrust, gravity, graben, step, ridge and trough faults. Recognition of faults in the field.	**Dr.PT Hanamgoud**
	PAPER II: Oxidation and supergene enrichment- Gossan, Zone of oxidation, supergene enrichment zone and Primary zone.	**Prof.SS Mense**
	Non Metallic: Origin of Coal, types of coal, uses and its distribution in India. Origin of Petroleum, Migration, accumulation, uses and its distribution in India	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2016

B.Sc.1 Sem

Month	TOPIC	Name of Staff Member
June 2016	Syllabus Discussion	
July	**DYNAMIC GEOLOGY:** **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Origin of Earth**: Nebular- Planetesimal hypotheses; Big bang theory, cooling and consolidation of earth **Interior of Earth:** Interpretation of interior of earth using seismic waves, Mohorovicic and Gutenberg discontinuities. General description of Crust, Mantle and Core.	Dr.PT Hanamgond
	Geological Agents: Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents**: Internal heat, Magmatic emanations, magma.	Prof.SS Mensc
	Isostasy: Pratt's and Ary's hypotheses. **Seafloor Spreading, Continental Drift Theory and Plate Tectonics:** Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	Prof.YM Kotre
August	**Coastal Processes: Definition** of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Fore dunes.	Dr.PT Hanamgond
	Weathering: Definition, agents of weathering- Physical, Chemical and Biological. **Physical weathering**: frost action (wedging and heaving); thermal weathering- spheroidal weathering (exfoliation); action of gravity: scree, talus, **Chemical weathering:** Water as a chemical agent. Oxidation, hydration and carbonation. **Biological weathering**: Action of plants, animals and man. Products of weathering-formation and types of soil.	Prof.SS Mensc
	Wind : Geological action of wind- erosion, transportation and deposition **Erosion and Erosional features- deflation- winnowing action, oasis, playas**. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- millet seed sand. **Transportation**- Suspension, saltation, traction/rolling. **Deposition a nd depositional features**: sand dunes- longitudinal, transverse dunes, barchans and loess deposit.	Prof.YM Kotre

September	**River**: Origin of River. **Stages of River**: Initial stage, Youth stage - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting; canyon/gorge; pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan; and Old stage- base level of erosion, and delta. **Geological action of River**- erosion: hydraulic action- abrasion, attrition, corrosion; Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Dr.PT Hanamgond**
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	Glacier: Definition, snow field, snow line, nevé/firn. Movement of glaciers, types of glaciers – valley glacier, piedmont glacier, ice sheet. **Surface features:** Crevasses, types of crevasses – bergschrund, longitudinal, transverse and marginal. **Geological action of Glacier:** erosion – abrasion, excavation/valley plucking, frost wedging and scraping; Erosional features- cirque/corrie, arête, horns, U-shape valley, hanging valley, rochemoutonnee. **Deposition** – depositional features: moraines- lateral, medial, terminal/end, ground moraines, tillite, erratic/perched block. **Glacio-fluvial deposits**- Outwash plain, kettle hole, kames, drumlins, eskers.	**Prof.YM Kutre**
October	**Earthquake:** Definition – focus and epicenter. Seismic waves: body (P & S) and surface waves (Love & Rayleigh); Causes- non tectonic (volcanic, landslides, explosions) and tectonic: elastic rebound theory; classification based on depth of epicenter; intensity: Mercali and Richter scale; seismograph and seismogram; seismic belt of India; effects of earth quake & tsunami; and prediction of earthquakes.	**Dr.PT Hanamgond**
	CRYSTALLOGRAPHY: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles, Euler's law. Interfacial angle, Contact Goniometer and its use. Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices.	**Prof.SS Mense**
	Study of crystal forms of normal classes of all six crystal systems- 1) Isometric, 2) Tetragonal, 3) Trigonal, 4) Hexagonal, 5) Orthorhombic, 6) Monoclinic and 7) Triclinic.	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2016

B.Sc.III Sem

Month	TOPIC	Name of Staff Member
June 2016	Syllabus Discussion & Brain Storming sessions	
July	**Introduction**- Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	**Dr.PT Hanamgond**
	Metamorphic Petrology: Introduction: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	**Prof.SS Mense**
	Igneous Petrology: Magma- Definition, Assimilation, Differentiation and Crystallization. Composition- acidic and basic magma. Mode of occurrence of igneous rocks: Intrusive and extrusive igneous rocks.	**Prof.YM Kutre**
August	**Sedimentary Petrology: Introduction**: Weathering, transportation, deposition, lithification and diagenesis.	**Dr.PT Hanamgond**
	Types of metamorphism with brief descriptions: Cataclastic, thermal, dynamothermal, plutonic metamorphism. **Metasomatism**- Neosome and Metasomes, Migmatites.	**Prof.SS Mense**
	Forms of Igneous rocks- Concordant – sill and lacolith; Discordant – dyke and batholith. **Structures of Igneous rocks** – Vesicular, Amygdaloidal, Flow, Pillow, Ropy and Columnar.	**Prof.YM Kutre**
September	**Structures of sedimentary rocks**: stratification, lamination, graded bedding, cross/ current bedding, ripple marks, mud cracks/sun cracks, rain prints and oolitic. **Textures of sedimentary rocks**: Clastic and non clastic. Wentworth grain size classification. Sphericity and roundness.	**Dr.PT Hanamgond**
	Textures and Structures in Metamorphic rocks: Crystalloblastic, palimpsest. Cataclastic, granulose, gneissose and schistose.	**Prof.SS Mense**
	Textures in igneous rocks: Definition. Crystallinity, granularity, shape of the crystal, mutual relationship. **Equigranular texture**: Panidiomorphic, hypodiomorphic, allotriomorphic; **Inequigranular texture**: Porphyritic, poikilitic, ophitic/subophitic, basaltic (intersertal-intergranular); **Intergrowth texture**: graphic, **Directive structure**: Flow/trachytic. Other textures – Myrmekitic, Corona/reaction rim and Perthitic.	**Prof.YM Kutre**
October	**Classification of sedimentary rocks**: Based on origin: Clastic/mechanical deposits and Non clastic deposits - residual, evaporites and non-evaporates/chemical and organic deposits: based on grain size- Rudaceous, arenaceous and argillaceous. ENVIRONMENTAL GEOLOGY: Definition of ecology and environmental geology, man and environment.	**Dr.PT Hanamgond**
	Metamorphic Facies: Facies Concept and types. Eskola's facies. **Hazards:** Definition, types of hazards- natural (volcano, earthquake, tsunami, landslide, cyclone and flood) and manmade hazards (soil erosion, coastal erosion). Hazard/disaster management – hazard zoning maps, risk assessment	**Prof.SS Mense**
	Classification of igneous rocks: Chemical classification- CIPW, Shand and Holmes, based on silica content (acidic, basic, intermediate and ultrabasic). Mineralogical classification- color index (leucocratic/felsic and melanocratic/mafic); Mineral content in rock: essential, accessory and secondary minerals. **Bowens Reaction Series** – Discontinuous and Continuous. Pollution- air, water and soil pollution.	**Prof.YM Kutre**

	liquid segregation and injection; and immiscible liquid segregation and injection). Sublimation. Metamorphism and Contact metasomatism deposits.	
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II: INDIAN MINERAL DEPOSITS**: **Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and non metallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India	**Prof.YM Katre**
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	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, crustification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits.	**Prof.SS Mense**
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes). - Advantages and limitations.	**Prof.YM Katre**

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	PAPER II: Metallic: Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals.	**Prof.YM Kutre**
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Department of Geology

MONTHLY TEACHING PLAN 2015

B.Sc.I Sem

Month	TOPIC	Name of Staff Member
June 2015	Syllabus Discussion	
July	**DYNAMIC GEOLOGY:** **Introduction:** Definition of Geology, branches of geology, role of geology in the development of mankind. **Origin of Earth**: Nebular– Planetesimal hypotheses; Big bang theory, cooling and consolidation of earth **Interior of Earth:** Interpretation of interior of earth using seismic waves, Mohorovicic and Gutenberg discontinuities. General description of Crust, Mantle and Core.	Dr.PT Hanamgond
	Geological Agents: Epigene and Hypogene agents. **Epigene agents:** atmospheric- heat, gases, moisture, surface-subsurface water, sea water, wind and ice. **Hypogene agents**: Internal heat, Magmatic emanations, magma.	Prof.SS Mense
	Isostasy: Pratt's and Ary's hypotheses. **Seafloor Spreading, Continental Drift Theory and Plate Tectonics:** Wegener's Theory of Continental Drift. Mid Oceanic Ridges, Convection currents, Constructive and Destructive plate boundaries (Divergent, Convergent and Transform)	Prof.YM Kotre
August	**Coastal Processes: Definition** of Coast. Types of Coasts. Shoreline of Emergence & Subsidence. Waves and Tides. Geological work of Sea waves – Erosion, Transportation and Deposition. Coastal landforms - Island, Beach, Estuary, Bay, Cliffs, Longshore Bar, Spit, Barrier and Free dunes.	Dr.PT Hanamgond
	Weathering: Definition, agents of weathering- Physical, Chemical and Biological. **Physical weathering**: frost action (wedging and heaving); thermal weathering- spheroidal weathering (exfoliation); action of gravity- scree, talus, **Chemical weathering:** Water as a chemical agent. Oxidation, hydration and carbonation. **Biological weathering**: Action of plants, animals and man. Products of weathering-formation and types of soil.	Prof.SS Mense
	Wind : Geological action of wind- erosion, transportation and deposition. **Erosion and Erosional features**- deflation- winnowing action, oasis, playas. Abrasion- ventifact, pedestal rocks, yardang, pinnacles/ inselberg. Attrition- mallet sand sand **Transportation**- Suspension, saltation, traction/rolling. **Deposition a nd depositional features**- sand dunes- longitudinal, transverse dunes, barchans and loess deposit	Prof.YM Kotre

September	**River**: Origin of River. **Stages of River**: Initial stage, Youth stage: - water fall, cascade, and river capture/piracy; Valley -V-shape valley, vertical cutting; canyon/gorge; pot hole; Mature stage- lateral cutting, meandering, oxbow lake, natural levee, flood plain, alluvial fan; and Old stage- base level of erosion, and delta. **Geological action of River**- erosion: hydraulic action- abrasion, attrition, corrosion; Transportation: solution, suspension, saltation and rolling. Formation of river terraces and their types.	**Dr.PT Hanamgond**
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	CRYSTALLOGRAPHY: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles, Euler's law. Interfacial angle, Contact Goniometer and its use. Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices.	**Prof.SS Menze**
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Department of Geology
MONTHLY TEACHING PLAN 2015
B.Sc.III Sem

Month	TOPIC	Name of Staff Member
June 2015	Syllabus Discussion & Brain Storming sessions	
July	**Introduction**- Classification of rocks into igneous, sedimentary and metamorphic. Rock Cycle.	Dr.PT Hanamgond
	Metamorphic Petrology: Introduction: Agents of metamorphism- Temperature, pressure and chemically active fluids. Stress and anti-stress minerals.	Prof.SS Mense
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Department of Geology
MONTHLY TEACHING PLAN 2015
B.Sc. V Sem

Month	TOPIC	Name of Staff Member
June 2015	Syllabus Discussion	
July 2015	**PAPER I: STRUCTURAL GEOLOGY: Introduction:** Stress, Strain, Rock deformation (brittle, plastic & elastic). Attitude of beds, Brunton compass and its uses. Outcrop: Definition, width and thickness, factors controlling the width of outcrop, Outlier and inliers. **PAPER II: ORE PROCESSES: Sedimentation** Deposits: Precipitation from carbonate solution, precipitation in oxidizing environment. Features of sedimentary ore deposits. Banded Iron Formation (BIF).	**Dr.PT Hanamgond**
	PAPER II: Introduction, syngenetic and epigenetic deposits. Controls of ore deposition – Structural, stratigraphic, physical and chemical. **Magmatic concentration**: Early (disseminations, segregation, injection) and late magmatic (residual liquid segregation and injection, and immiscible liquid segregation and injection), Sublimation. Metamorphism and Contact metasomatism deposits.	**Prof.SS Mense**
	PAPER I: MINING GEOLOGY: Introduction- Role of geology in mining industry. Definition of mining terms- shaft, hanging wall, adit, roof, drive, cross cut, tunnel, raise, winze, slopes- types. **PAPER II: INDIAN MINERAL DEPOSITS: Ore Mineral:** Definition of ore mineral, ore, gangue, tenor. Introduction to metallic and non metallic ore minerals. Introduction, Mineralogy, Uses and distribution of following ore minerals in India.	**Prof.YM Kutre**
August	**PAPER I:** Conformity and unconformity, types of unconformities- angular, disconformity, blended, non conformity, regional and local unconformity. Recognition of unconformity in the field.	**Dr.PT Hanamgond**
	PAPER II: Hydrothermal- Epithermal, mesothermal, hypothermal, cavity filling, cristification, fissure veins (ladder vein, stocks, box work, gash veins), replacement deposits.	**Prof.SS Mense**
	PAPER I: Methods of mining- open cast mining (benches, explosives, working slope) and quarrying; underground/subsurface mining (stoping- open stopes, supported stopes). Advantages and limitations.	**Prof.YM Kutre**

September	**PAPER I:** Joints: definition, classification- geometric: strike, dip, oblique and bedding joints. genetic – columnar, feather, extension and release, sheeting, cliff and grain. Significance of joints. Folds- definition, parts of fold- limb, hinge, axis, axial plane and plunge. Types of folds- Symmetrical, asymmetrical, anticline, syncline, over turned, isoclinals, recumbent, chevron, drag, monoclinal fold. Recognition of folds in the field.	**Dr.PT Hanamgoud**
	PAPER II: Residual deposits- lateritisation and bauxitisation. **Evaporites-** salt deposits **Mechanical concentration deposits –** alluvial, eluvial, eolian and beach placers (detrital/heavy minerals).	**Prof.SS Menso**
	PAPER II: Metallic; Iron, Manganese, Copper, Aluminium (Bauxite), Gold Medicinal use of minerals and ore minerals.	**Prof.VM Katre**
October	**PAPER I: Faults: definition, terminology**- fault plane, hanging wall and foot wall, dip and hade, throw and heave. Nature of movement- translation and rotational, relative movements. Slip, strike slip, dip slip and net slip; **Classification of Faults:** Geometric – **strike fault, dip fault,** oblique fault; based on apparent movement – **normal** and reverse fault. Genetic- flexure, gravity, graben, step, ridge and trough faults. Recognition of faults in the field.	**Dr.PT Hanamgoud**
	PAPER II: Oxidation and supergene enrichment- Gossan, Zone of oxidation, supergene enrichment zone and Primary zone.	**Prof.SS Menso**
	Non Metallic: Origin of Coal, types of coal, uses and its distribution in India. Origin of Petroleum, Migration, accumulation, uses and its distribution in India.	**Prof.VM Katre**

Department of Geology

MONTHLY TEACHING PLAN 2021 (EVEN SEM)

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
April 28-30 2021	Syllabus Discussion	All Geology faculty
May 2021	**Nature of light** – Electromagnetic wave. Ordinary and polarized light – Reflection, refraction and refractive index, critical angle and total internal reflection. Double refraction **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	Dr.PT Hanamgond
	Crystallographyy: Definition of crystal, morphological characters of crystal – face, form, edge, solid angles, Euler's law. Interfacial angle. Contact Goniometer and its use.	Prof.SS Mense
	Mineralogy: Definition of mineral. **Properties depending upon light**- color, streak, diaphaneity, lustre. **Properties depending upon state of aggregation**- Forms- columnar, lamellar and granular. **Imitative shapes**- reniform, botryoidal, mammillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmatic.	Prof.YM Kutre
June 2021	**Polarization:** polarization by reflection, Brewster's law - polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	Dr.PT Hanamgond
	Symmetry characters– Plane, axes and centre. Crystallographic axes, axial ratio and notation. Parameters- Weiss parameter, Miller indices.	Prof.SS Mense
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance. **Forms**- Isomorphism, polymorphism, pseudomorphism **Properties depending upon cohesion and elasticity** - Cleavage. Fracture. Hardness (Moh's scale of hardness) and Tenacity. **Other properties**: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	Prof.YM Kutre
July 2021	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols**- Isotropism and anisotropism; Interference Colours, Birefringence; Extinction - types, extinction angle; Zoning and Twinning.	Dr.PT Hanamgond
	Study of crystal forms of normal classes of all six crystal systems– 1) Isometric, 2) Tetragonal, 3) Trigonal, 4) Hexagonal, 5) Orthorhombic, 6) Monoclinic and 7) Triclinic.	Prof.SS Mense
	Silicate Mineral Structures. **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	Prof.YM Kutre
August 2021	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge. **Gemstones:** Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	Dr.PT Hanamgond
	General characters and uses of following group of minerals: Pyroxene, Amphibole	Prof.SS Mense
	General characters and uses of following group of minerals: Olivine & Garnet.	Prof.YM Kutre

Department of Geology
MONTHLY TEACHING PLAN 2021 (EVEN SEMESTER)
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
April 28-30 2021	Syllabus Discussion	
May 2021	**PALEONTOLOGY: Introduction:** Fossil Definition; Mode of fossilisation- mummification, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	**Dr.PT Hanamgond**
	PRINCIPLES OF STRATIGRAPHY : Introduction: Definition, Uniformitarianism, Catastrophism. Order of superposition.	**Prof.SS Mense**
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and indo-gangetic alluvial plains.	**Prof.YM Kutre**
June 2021	General morphological characters, description, and geological distribution of following phyla in brief. **Phylum Protozoa**- Foraminifera. **Phylum Coelenterata**- class Anthozoa, typical coral; class Graptoloidea – Monograptus and Diplograptus.	**Dr.PT Hanamgond**
	Correlation and correlation methods- Petrological and paleontological.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Archaeans of Karnataka. Cuddapah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	**Prof.YM Kutre**
July 2021	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Paleozoic & Mesozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	**Prof.YM Kutre**
August 2021	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**: class Lamellibranchia; class Gastropoda; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatitic, Ceratitic and Ammonitic) **Phylum Arthropoda**: class crustacea- Trilobites.	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Deccan traps- lava types, inter trappeans, infra trappeans, bagh and lameta beds.	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2021 (EVEN SEMESTER)

B.Sc. VI Sem (P- I: Hydrogeology & Environmental Geology; P – II Remote Sensing & Engineering Geology)

Month	TOPIC	Name of Staff Member
April 28-30 2021	Syllabus Discussion	
May 2021	**HYDROGEOLOGY:** Definition. **Hydrological Cycle**- Evaporation, transpiration, evapotranspiration, precipitation, sublimation, infiltration, runoff, groundwater flow. **REMOTE SENSING:** Introduction. Fundamentals of Remote Sensing. Electromagnetic spectrum- Visible & Infrared spectrum	Dr.PT Hanamgond
	ENVIRONMENTAL GEOLOGY: Definition of ecology and environmental geology, man and environment Hazards: Definition, types of hazards: natural (volcano, earthquake, tsunami, landslide, cyclone and flood) and manmade hazards (soil erosion, coastal erosion).	Prof.YM Kutre
	Brief history and types of Indian Remote Sensing Satellites. Applications of aerial photographs/satellite imageries in Geoscience & Geomorphological studies.	Prof.SS Mense
June 2021	**Hydrological properties of water bearing materials**: Specific yield, specific retention, porosity, permeability, types of openings in rocks. **Subsurface distribution of water**: Zone of aeration, zone of saturation, groundwater table, perched water table. Passive and Active sensors; Image Resolution- spatial, spectral, radiometric and temporal. Types of Images: Panchromatic image, True Color & False color composite. Thematic images	Dr.PT Hanamgond
	Hazard/disaster management – hazard zoning maps, risk assessment.	Prof.YM Kutre
	ENGINEERING GEOLOGY: Engineering properties of rocks: crushing strength, porosity, density, abrasive resistance.	Prof.SS Mense
July 2021	**Aquifers**: Definition, classification-Confined and unconfined aquifers, aquiclude, aquifuge, aquitard and Darcy's Law. **Seepage**: Definition, factors controlling seepage, influent and effluent seepage. Parts of aerial photograph: Fiducial Marks. Types of aerial photograph- vertical, inclined/oblique photographs Elements of photo/image interpretation: Photo elements- color, tone, texture, pattern, shape, size, shadow and associated features	Dr.PT Hanamgond
	Greenhouse effect, Global Warming and their effect on the environment **Wells and types of wells**- dug well and bore well.	Prof.YM Kutre
	Geological investigation for construction of dams, tunnels with remedial measures **GPS** - General principles and uses.	Prof.SS Mense
August 2021	**Springs**: Definition, classification- gravity and non gravity; types of springs- bedding plane, contact, thermal and artesian. Rainwater harvesting; and Groundwater recharge structures Elements of photo/image interpretation: Geotechnical elements- landforms, vegetations, drainage patterns and density, erosional pattern and land use	Dr.PT Hanamgond
	Pollution- air, water and soil pollution.	Prof.YM Kutre
	Building materials - sand, building and dimension stones, aggregates, lime and cement, clays and clay products.	Prof.SS Mense

Department of Geology

MONTHLY TEACHING PLAN 2020 (EVEN SEM)

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
December 2019	Syllabus Discussion & Brain Storming sessions.	All Geology faculty
January 2020	**Nature of light** – Electromagnetic wave. Ordinary and polarized light – Reflection, refraction and refractive index, critical angle and total internal reflection. Double refraction. **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	Dr.PT Hanamgond
	Definition of mineral. **Properties depending upon light**- color, streak, diaphaneity, luster. **Properties depending upon state of aggregation**- Forms- columnar, lamellar and granular.	Prof.SS Mense
	Imitative shapes- reniform, botryoidal, mammillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmitic.	Prof.YM Kutre
February	**Polarization:** polarization by reflection, Brewster's law - polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	Dr.PT Hanamgond
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	Prof.SS Mense
	Forms- Isomorphism, polymorphism, pseudomorphism **Properties depending upon cohesion and elasticity** – Cleavage, Fracture, Hardness (Mob's scale of hardness) and Tenacity	Prof.YM Kutre
March	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols**- Isotropism and anisotropism; Interference Colours; Birefringence; Extinction - types, extinction angle, Zoning and Twinning.	Dr.PT Hanamgond
	Silicate Mineral Structures **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	Prof.SS Mense
	Gemstones: Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	Prof.YM Kutre
April	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge.	Dr.PT Hanamgond
	General characters and uses of following group of minerals: Pyroxene, Amphibole	Prof.SS Mense
	General characters and uses of following group of minerals: Olivine & Garnet.	Prof.YM Kutre

Department of Geology
MONTHLY TEACHING PLAN 2020 (EVEN SUMESTER)
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
December 2019	Syllabus Discussion & Brain Storming sessions	
January 2020	**PALEONTOLOGY: Introduction**: Fossil Definition, Mode of fossilization- mineralization, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	Dr.PT Hanamgond
	PRINCIPLES OF STRATIGHAPHY : Introduction: Definition, Uniformitarianism, Catastrophism, Order of superposition.	Prof.SS Mense
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and indo-gangetic alluvial plains	Prof.YM Kutre
February	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Protozoa**- Foraminifera **Phylum Coelenterata**- class Anthozoa, typical coral; class Graptolithoidea Monograptus and Diplograptus	Dr.PT Hanamgond
	Correlation and correlation methods- Petrological and paleontological.	Prof.SS Mense
	Petrology, classification and economic importance of- Archaeans of Karnataka. Cuddapah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	Prof.YM Kutre
March	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia	Dr.PT Hanamgond
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Palezoic & Mesozoic era.	Prof.SS Mense
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	Prof.YM Kutre
April	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**: class Lamellibranchs; class Gastropoda; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatite, Ceratite and Ammonitic) **Phylum Arthropoda**: class crustacea- Trilobites	Dr.PT Hanamgond
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era.	Prof.SS Mense
	Petrology, classification and economic importance of- Deccan traps- Inter trappeans, infra trappeans, bagh and lameta beds.	Prof.YM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2020 (EVEN SEMESTER)

B.Sc. VI Sem (P- I: Hydrogeology & Environmental Geology; P – II Remote Sensing & Engineering Geology)

Month	TOPIC	Name of Staff Member
December 2019	Syllabus Discussion & Brain Storming sessions	
January 2020	**HYDROGEOLOGY:** Definition. **Hydrological Cycle**- Evaporation, transpiration, evapotranspiration, precipitation, sublimation, infiltration, runoff, groundwater flow. **REMOTE SENSING:** Introduction. Fundamentals of Remote Sensing. Electromagnetic spectrum- Visible & Infrared spectrum	Dr.PT Hanamgond
	ENVIRONMENTAL GEOLOGY: Definition of ecology and environmental geology, man and environment Hazards. Definition, types of hazards- natural (volcano, earthquake, tsunami, landslide, cyclone and flood) and manmade hazards (soil erosion, coastal erosion).	Prof.YM Kutre
	Brief history and types of Indian Remote Sensing Satellites. Applications of aerial photographs/satellite imageries in Geoscience & Geomorphological studies.	Prof.SS Mense
February	**Hydrological properties of water bearing materials:** Specific yield, specific retention, porosity, permeability, types of openings in rocks. **Subsurface distribution of water:** Zone of aeration, zone of saturation, groundwater table, perched water table. Passive and Active sensors; Image Resolution- spatial, spectral, radiometric and temporal. Types of Images: Panchromatic image, True Color & False color composite, Thematic images	Dr.PT Hanamgond
	Hazard/disaster management – hazard zoning maps, risk assessment.	Prof.YM Kutre
	ENGINEERING GEOLOGY: Engineering properties of rocks: crushing strength, porosity, density, abrasive resistance.	Prof.SS Mense
March	**Aquifers**: Definition, classification-Confined and unconfined aquifers, aquiclude, aquifuge, aquitard and Darcy's Law **Seepage**: Definition, factors controlling seepage, influent and effluent seepage. Parts of aerial photograph: Fiducial Marks. Types of aerial photograph- vertical, inclined/oblique photographs Elements of photo/image interpretation: Photo elements: color, tone, texture, pattern, shape, size, shadow and associated features.	Dr.PT Hanamgond
	Greenhouse effect, Global Warming and their effect on the environment **Wells and types of wells**- dug well and bore well.	Prof.YM Kutre
	Geological investigation for construction of dams, tunnels with remedial measures **GPS** – General principles and uses.	Prof.SS Mense
April	**Springs**: Definition, classification- gravity and non gravity; types of springs- bedding plane, contact, thermal and artesian. Rainwater harvesting; and Groundwater recharge structures Elements of photo/image interpretation: Geotechnical elements- landforms, vegetations, drainage patterns and density, erosional pattern and land use.	Dr.PT Hanamgond
	Pollution- air, water and soil pollution.	Prof.YM Kutre
	Building materials - sand, building and dimension stones, aggregates, lime and cement, clays and clay products.	Prof.SS Mense

Department of Geology

MONTHLY TEACHING PLAN 2018 (EVEN SEM)

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
December 2018	Syllabus Discussion & Brain Storming sessions	
January 2019	**Nature of light –** Electromagnetic wave. Ordinary and polarised light – Reflection, refraction and refractive index, critical angle and total internal reflection. Double refraction. **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	**Dr.PT Hanamgond**
	Definition of mineral. **Properties depending upon light**- color, streak, diaphaneity, lustre. **Properties depending upon state of aggregation**- Forms- columnar, lamellar and granular.	**Prof.SS Mense**
	Imitative shapes- reniform, botryoidal, mamillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmitic.	**Prof.VM Kutre**
February	**Polarization:** polarization by reflection, Brewster's law - polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	**Dr.PT Hanamgond**
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	**Prof.SS Mense**
	Forms- Isomorphism, polymorphism, pseudomorphism. **Properties depending upon cohesion and elasticity** - Cleavage, Fracture, Hardness (Moh's scale of hardness) and Tenacity	**Prof.VM Kutre**
March	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols**- Isotropism and anisotropism; Interference Colours; Birefringence; Extinction - types, extinction angle; Zoning and Twinning.	**Dr.PT Hanamgond**
	Silicate Mineral Structures. **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	**Prof.SS Mense**
	Gemstones: Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	**Prof.VM Kutre**
April	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge.	**Dr.PT Hanamgond**
	General characters and uses of following group of minerals: Pyroxene, Amphibole	**Prof.SS Mense**
	General characters and uses of following group of minerals: Olivine & Garnet.	**Prof.VM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2018 (EVEN SEMESTER)
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
December 2018	Syllabus Discussion & Brain Storming sessions	
January 2019	**PALEONTOLOGY: Introduction**: Fossil Definition, Mode of fossilisation- mummification, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	**Dr.PT Hanamgond**
	PRINCIPLES OF STRATIGRAPHY : Introduction: Definition, Uniformitarianism, Catastrophism, Order of superposition.	**Prof.SS Mense**
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and indo gangetic alluvial plains.	**Prof.YM Kutre**
February	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Protozoa**- Foraminifera. **Phylum Coelenterata**- class Anthozoa, typical coral; class Graptolithoidea – Monograptus and Diplograptus.	**Dr.PT Hanamgond**
	Correlation and correlation methods- Petrological and paleontological.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Archaeans of Karnataka. Cuddappah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	**Prof.YM Kutre**
March	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Paleozoic & Mesozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	**Prof.YM Kutre**
April	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**: class Lamellibranchs; class Gastropods; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatitic, Ceratitic and Ammonitic) **Phylum Arthropoda**: class crustacea- Trilobites	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Deccan traps- Inter trappeans, infra trappeans, high and lanseta beds.	**Prof.YM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2018 (EVEN SEMESTER)
B.Sc. VI Sem

Month	TOPIC	Name of Staff Member
December 2018	Syllabus Discussion & Brain Storming sessions	
January 2019	**HYDROGEOLOGY:** Definition. **Hydrological Cycle**- Evaporation, transpiration, evapotranspiration, precipitation, sublimation, infiltration, runoff, groundwater flow. **REMOTE SENSING:** Introduction. Fundamentals of Remote Sensing. Electromagnetic spectrum- Visible & Infrared spectrum	Dr.PT Hanamgond
	GEOPHYSICS: Earth's magnetic and gravitational fields. General principles and applications of - Magnetic methods, gravity method, electrical methods (direct current resistivity methods), vertical electrical soundings; and Seismic method	Prof.SS Mense
	Brief history and types of Indian Remote Sensing Satellites. Applications of aerial photographs/satellite imageries in Geoscience & Geomorphological studies.	Prof.YM Kutre
February	**Hydrological properties of water bearing materials**: Specific yield, specific retention, porosity, permeability, types of openings in rocks. **Subsurface distribution of water**: Zone of aeration, zone of saturation, groundwater table, perched water table. Passive and Active sensors; Image Resolution- spatial, spectral, radiometric and temporal. Types of Images: Panchromatic image, True Color & False color composite, Thematic images	Dr.PT Hanamgond
	General principles and applications of - gravity method. General principles and uses of pocket and mirror stereoscopes.	Prof.SS Mense
	ENGINEERING GEOLOGY: Engineering properties of rocks: crushing strength, porosity, density, abrasive resistance.	Prof.YM Kutre
March	**Aquifers**: Definition, classification-Confined and unconfined aquifers, aquiclude, aquifuge, aquitard and Darcy's Law. **Seepage**: Definition, factors controlling seepage, influent and effluent seepage. Parts of aerial photograph: Fiducial Marks. Types of aerial photograph- vertical, inclined/oblique photographs Elements of photo/image interpretation: Photo elements- color, tone, texture, pattern, shape, size, shadow and associated features.	Dr.PT Hanamgond
	General principles and applications of - Electrical methods (direct current resistivity methods) **Wells and types of wells**- dug well and bore well.	Prof.SS Mense
	Geological investigation for construction of dams, tunnels with remedial measures. GPS - General principles and uses.	Prof.YM Kutre
April	**Springs**: Definition, classification- gravity and non gravity; types of springs- bubbling plane, contact, thermal and artesian. Rainwater harvesting, and Groundwater recharge structures Elements of photo/image interpretation: Geotechnical elements- landforms, vegetations, drainage patterns and density, erosional pattern and land use.	Dr.PT Hanamgond
	General principles and applications of - Vertical Electrical Soundings (VES); and Seismic method.	Prof.SS Mense
	Building materials - sand, building and dimension stones, aggregates, lime and cement, clays and clay products.	Prof.YM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2017-18

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
December 2017	Syllabus Discussion & Brain Storming session	
January 2018	**Nature of light** – Electromagnetic wave. Ordinary and polarized light – **Reflection,** refraction and refractive index, critical angle and total internal reflection. Double refraction. **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	**Dr.PT Hanamgond**
	Definition of mineral. **Properties depending upon light**- color, streak, diaphaneity, luster. **Properties depending upon state of aggregation**- Forms- columnar, lamellar and granular.	**Prof.SS Mense**
	Imitative shapes- reniform, botryoidal, mamillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmitic.	**Prof.YM Kutre**
February	**Polarization:** polarization by reflection, Brewster's law - polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	**Dr.PT Hanamgond**
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	**Prof.SS Mense**
	Forms- Isomorphism, polymorphism, pseudomorphism **Properties depending upon cohesion and elasticity** - Cleavage, Fracture, Hardness (Moh's scale of hardness) and Tenacity	**Prof.YM Kutre**
March	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols** Isotropism and anisotropism: Interference Colours; Birefringence; Extinction - types, extinction angle, Zoning and Twinning.	**Dr.PT Hanamgond**
	Silicate Mineral Structures **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	**Prof.SS Mense**
	Gemstones: Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	**Prof.YM Kutre**
April	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge.	**Dr.PT Hanamgond**
	General characters and uses of following group of minerals: Pyroxene, Amphibole	**Prof.SS Mense**
	General characters and uses of following group of minerals: Olivine & Garnet.	**Prof.YM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2017-18
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
December 2017	Syllabus Discussion & Brain Storming sessions	
January 2018	**PALEONTOLOGY: Introduction**: Fossil Definition, Mode of fossilisation- mummification, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	**Dr.PT Hanamgond**
	PRINCIPLES OF STRATIGRAPHY : Introduction: Definition, Uniformitarianism, Catastrophism, Order of superposition.	**Prof.SS Mense**
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and indo-gangetic alluvial plains	**Prof.YM Kutre**
February	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Protozoa**- Foraminifera. **Phylum Coelenterata**- class Anthozoa, typical coral; class Graptolithoidea – Monograptus and Diplograptus	**Dr.PT Hanamgond**
	Correlation and correlation methods- Petrological and paleontological.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Archaeans of Karnataka. Cuddapah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	**Prof.YM Kutre**
March	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Paleozoic & Mesozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	**Prof.YM Kutre**
April	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**: class Lamellibranchs, class Gastropoda; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatitic, Ceratitic and Ammonitic) **Phylum Arthropoda**: class crustacea- Trilobites	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Deccan traps- Inter trappeans, intra trappeans, bagh and lameta beds.	**Prof.YM Kutre**

MONTHLY TEACHING PLAN 17-2018

B.Sc. VI Sem

Month	TOPIC	Name of Staff Member
December 2017	Syllabus Discussion & Brain Storming sessions	
	HYDROGEOLOGY: Definition. Hydrological Cycle- Evaporation, transpiration, evapotranspiration.	

MONTHLY TEACHING PLAN 17-2018

B.Sc. VI Sem

Month	TOPIC	Name of Staff Member
December 2017	Syllabus Discussion & Brain Storming sessions	
January 2018	**HYDROGEOLOGY:** Definition. **Hydrological Cycle**- Evaporation, transpiration, evapotranspiration, precipitation, sublimation, infiltration, runoff, groundwater flow. **REMOTE SENSING:** Introduction. Fundamentals of Remote Sensing. Electromagnetic spectrum- Visible & Infrared spectrum	Dr.PT Hanamgond
	GEOPHYSICS: Earth's magnetic and gravitational fields. General principles and applications of - Magnetic methods, gravity method, electrical methods (direct current resistivity methods), vertical electrical soundings; and Seismic method.	Prof.SS Mense
	Brief history and types of Indian Remote Sensing Satellites. Applications of aerial photographs/satellite imageries in Geoscience & Geomorphological studies.	Prof.YM Kutre
February	**Hydrological properties of water bearing materials:** Specific yield, specific retention, porosity, permeability, types of openings in rocks. **Subsurface distribution of water**: Zone of aeration, zone of saturation, groundwater table, perched water table. Passive and Active sensors, Image Resolution- spatial, spectral, radiometric and temporal. Types of Images: Panchromatic image, True Color & False color composite, Thematic images	Dr.PT Hanamgond
	General principles and applications of - gravity method General principles and uses of pocket and mirror stereoscopes.	Prof.SS Mense
	ENGINEERING GEOLOGY: Engineering properties of rocks: crushing strength, porosity, density, abrasive resistance.	Prof.YM Kutre
March	**Aquifers:** Definition, classification-Confined and unconfined aquifers, aquiclude, aquifuge, aquitard and Darcy's Law. **Seepage**: Definition, factors controlling seepage, influent and effluent seepage. Parts of aerial photograph: Fiducial Marks. Types of aerial photograph- vertical, inclined/oblique photographs Elements of photo/image interpretation: Photo elements- color, tone, texture, pattern, shape, size, shadow and associated features.	Dr.PT Hanamgond
	General principles and applications of - Electrical methods (direct current resistivity methods) **Wells and types of wells**- dug well and bore well	Prof.SS Mense
	Geological investigation for construction of dams, tunnels with remedial measures. **GPS** - General principles and uses.	Prof.YM Kutre
April	**Springs**: Definition, classification- gravity and non gravity; types of springs- bedding plane, contact, thermal and artesian. Rainwater harvesting; and Groundwater recharge structures. Elements of photo/image interpretation: Geomorphical elements- landforms, vegetations, drainage patterns and density, erosional pattern and land use.	Dr.PT Hanamgond
	General principles and applications of - Vertical Electrical Soundings (VES); and Seismic method	Prof.SS Mense
	Building materials - sand, building and dimension stones, aggregates, lime and cements, clays and clay products.	Prof.YM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2016-17

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
December 2016	Syllabus Discussion & Brain Storming sessions	
January 2017	**Nature of light** – Electromagnetic wave, Ordinary and polarised light – Reflection, refraction and refractive index, critical angle and total internal reflection. Double refraction. **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	Dr.PT Hanamgond
	Definition of mineral. **Properties depending upon light-** color, streak, diaphaneity, lustar. **Properties depending upon state of aggregation** - Forms- columnar, lamellar and granular.	Prof.SS Mense
	Imitative shapes- reniform, botryoidal, mammillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmitic.	Prof.VM Kutre
February	**Polarization:** polarization by reflection, Brewster's law – polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	Dr.PT Hanamgond
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	Prof.SS Mense
	Forms- Isomorphism, polymorphism, pseudomorphism. **Properties depending upon cohesion and elasticity** - Cleavage, Fracture, Hardness (Moh's scale of hardness) and Tenacity.	Prof.VM Kutre
March	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols**- Isotropism and anisotropism; Interference Colours, Birefringence, Extinction - types, extinction angle; Zoning and Twinning.	Dr.PT Hanamgond
	Silicate Mineral Structures. **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	Prof.SS Mense
	Gemstones: Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	Prof.VM Kutre
April	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge.	Dr.PT Hanamgond
	General characters and uses of following group of minerals: Pyroxene, Amphibole	Prof.SS Mense
	General characters and uses of following group of minerals: Olivine & Garnet.	Prof.VM Kutre

Department of Geology
MONTHLY TEACHING PLAN 2016-17
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
December 2016	Syllabus Discussion & Brain Storming sessions	
January 2017	**PALEONTOLOGY: Introduction**: Fossil Definition, Mode of fossilisation- mummification, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	**Dr.PT Hanamgond**
	PRINCIPLES OF STRATIGRAPHY : Introduction: Definition, Uniformitarianism, Catastrophism, Order of superposition.	**Prof.SS Mense**
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and Indo-gangetic alluvial plains.	**Prof.YM Kutre**
February	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Protozoa**- Foraminifera. **Phylum Coelenterata**- class Anthozoa, typical coral, class Graptolitoidea – Monograptus and Diplograptus.	**Dr.PT Hanamgond**
	Correlation and correlation methods: Petrological and paleontological.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Archaeans of Karnataka. Cuddapah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	**Prof.YM Kutre**
March	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia.	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Paleozoic & Mesozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	**Prof.YM Kutre**
April	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**, class Lamellibranchs; class Gastropoda; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatitic, Ceratitic and Ammonitic) **Phylum Arthropoda**: class crustacea- Trilobites	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era	**Prof.SS Mense**
	Petrology, classification and economic importance of- Deccan traps- Inter trappeans, infra trappeans, bagh and lameta beds	**Prof.YM Kutre**

Department of Geology

MONTHLY TEACHING PLAN 2016-2017

B.Sc. VI Sem

Month	TOPIC	Name of Staff Member
December 2016	Syllabus Discussion & Brain Storming sessions	
January 2017	**HYDROGEOLOGY:** Definition. **Hydrological Cycle**- Evaporation, transpiration, evapotranspiration, precipitation, sublimation, infiltration, runoff, groundwater flow. **REMOTE SENSING:** Introduction. Fundamentals of Remote Sensing. Electromagnetic spectrum- Visible & Infrared spectrum	Dr.PT Hanamgond
	GEOPHYSICS: Earth's magnetic and gravitational fields. General principles and applications of - Magnetic methods, gravity method, electrical methods (direct current resistivity methods), vertical electrical soundings; and Seismic method.	Prof.SS Mense
	Brief history and types of Indian Remote Sensing Satellites. Applications of aerial photographs/satellite imageries in Geoscience & Geomorphological studies.	Prof.VM Kutre
February	**Hydrological properties of water bearing materials:** Specific yield, specific retention, porosity, permeability, types of openings in rocks. **Subsurface distribution of water:** Zone of aeration, zone of saturation, groundwater table, perched water table. Passive and Active sensors; Image Resolution- spatial, spectral, radiometric and temporal. Types of Images: Panchromatic image, True Color & False color composite. Thematic images	Dr.PT Hanamgond
	General principles and applications of - gravity method. General principles and uses of pocket and mirror stereoscopes.	Prof.SS Mense
	ENGINEERING GEOLOGY: Engineering properties of rocks: crushing strength, porosity, density, abrasive resistance.	Prof.VM Kutre
March	**Aquifers**: Definition, classification-Confined and unconfined aquifers, aquiclude, aquifuge, aquitard and Darcy's Law. **Seepage**: Definition, factors controlling seepage, influent and effluent seepage. Parts of aerial photograph: Fiducial Marks. Types of aerial photograph- vertical, inclined/oblique photographs Elements of photo/image interpretation: Photo elements- color, tone, texture, pattern, shape, size, shadow and associated features.	Dr.PT Hanamgond
	General principles and applications of - Electrical methods (direct current resistivity methods) **Wells and types of wells**- dug well and bore well.	Prof.SS Mense
	Geological investigation for construction of dams, tunnels with remedial measures. **GPS** - General principles and uses.	Prof.VM Kutre
April	**Springs**: Definition, classification- gravity and non gravity; types of springs- bedding plane, contact, thermal and artesian. Rainwater harvesting; and Groundwater recharge structures Elements of photo/image interpretation: Geotechnical elements- landforms, vegetations, drainage patterns and density, erosional pattern and land use.	Dr.PT Hanamgond
	General principles and applications of - Vertical Electrical Soundings (VES); and Seismic method.	Prof.SS Mense
	Building materials - sand, building and dimension stones, aggregates, lime and cement, clays and clay products.	Prof.VM Kutre

Department of Geology

MONTHLY TEACHING PLAN 2015-16

B.Sc.II Sem

Month	TOPIC	Name of Staff Member
December 2015	Syllabus Discussion & Brain Storming sessions	
January 2016	**Nature of light** – Electromagnetic wave. Ordinary and polarized light – Reflection, refraction and refractive index, critical angle and total internal reflection. Double refraction. **Petrological microscope:** Introduction to parts of microscope. Preparation of thin section.	**Dr.PT Hanamgond**
	Definition of mineral. **Properties depending upon light**- color, streak, diaphanicity, luster. **Properties depending upon state of aggregation**- Forms- columnar, lamellar and granular.	**Prof.SS Mense**
	Imitative shapes- reniform, botryoidal, mamillary, amygdaloidal, vesicular, dendritic, stalactitic and stalagmitic.	**Prof.YM Kutre**
February	**Polarization:** polarization by reflection, Brewster's law - polarization by refraction, polarization by absorption. **Construction of Nicol Prism** – Behavior of light in the microscope without mineral, with isotropic mineral and with anisotropic mineral.	**Dr.PT Hanamgond**
	Other properties: Taste, Odor, Feel, Magnetism, Electricity. **Specific Gravity** – Walker Steel Yard Balance.	**Prof.SS Mense**
	Forms- Isomorphism, polymorphism, pseudomorphism. **Properties depending upon cohesion and elasticity** - Cleavage, Fracture, Hardness (Moh's scale of hardness) and Tenacity.	**Prof.YM Kutre**
March	**Optical properties of mineral:** in plane polarised light- colour, pleochroism, form, cleavage, fracture, relief. **Properties in analysed light/crossed nicols** - Isotropism and anisotropism, Interference Colours, Birefringence, Extinction - types, extinction angle, Zoning and Twinning.	**Dr.PT Hanamgond**
	Silicate Mineral Structures. **General characters and uses of following group of minerals:** Quartz, Felspar, Mica	**Prof.SS Mense**
	Gemstones: Definition, Specifications - Carat, Color, Clarity, Cuts, Rarity, Durability. Types of gemstones and uses.	**Prof.YM Kutre**
April	**Optical Accessories:** Mica plate, Gypsum Plate and Quartz Wedge.	**Dr.PT Hanamgond**
	General characters and uses of following group of minerals: Pyroxene, Amphibole	**Prof.SS Mense**
	General characters and uses of following group of minerals: Olivine & Garnet.	**Prof.YM Kutre**

Department of Geology
MONTHLY TEACHING PLAN 2015-16
B.Sc.IV Sem

Month	TOPIC	Name of Staff Member
December 2015	Syllabus Discussion & Brain Storming session	
January 2016	**PALEONTOLOGY: Introduction**: Fossil Definition, Mode of fossilisation- mummification, permineralisation, petrifaction, carbonisation, mould and cast, imprints, tracks and trails. Significance of fossils.	**Dr.PT Hanamgond**
	PRINCIPLES OF STRATIGRAPHY : Introduction: Definition, Uniformitarianism, Catastrophism, Order of superposition.	**Prof.SS Mense**
	INDIAN STRATIGRAPHY: Brief account of physiographic divisions of India- Peninsular, extra peninsular and indo-gangetic alluvial plains.	**Prof.YM Kutre**
February	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Protozoa**- Foraminifera. **Phylum Coelenterata**- class Anthozoa, typical coral; class Graptolitoidea – Monograptus and Diplograptus.	**Dr.PT Hanamgond**
	Correlation and correlation methods- Petrological and paleontological	**Prof.SS Mense**
	Petrology, classification and economic importance of- Archaeans of Karnataka Cuddapah system of Andhra Pradesh and its equivalents in Karnataka- Kaladgi series	**Prof.YM Kutre**
March	General morphological characters, description, and geological distribution of following phyla in brief: **Phylum Brachiopoda**- Types of hinge line and distinguishing characters. **Phylum Echinoderma**- Regularia and Irregularia	**Dr.PT Hanamgond**
	***Geological* Time Scale**: Important Geological events (climate, life and mountain building) in brief during- Paleozoic & Mesozoic era.	**Prof.SS Mense**
	Petrology, classification and economic importance of- Vindhyans system. Petrology, classification and economic importance of- Gondwana system with flora and fauna	**Prof.YM Kutre**
April	General morphological characters, description, and geological distribution of following phylum in brief: **Phylum Mollusca**- class Lamellibranchs; class Gastropods; class Cephalopoda- Nautiloidea and Ammonoidea- types of suture lines (Simple, Goniatitic, Ceratitic and Ammonitic) **Phylum Arthropoda**- class crustacea- Trilobites	**Dr.PT Hanamgond**
	Geological Time Scale: Important Geological events (climate, life and mountain building) in brief during- Cenozoic era	**Prof.SS Mense**
	Petrology, classification and economic importance of- Deccan traps- Inter trappeans, infra trappeans, high and lameta beds.	**Prof.YM Kutre**

DEPT. OF ZOOLOGY

MONTHLY TEACHING PLAN

2015-16 TO 2019 -2020

Month-wise Syllabus Distribution for 2015-16

Prof. M. S. Goundadkar

B.Sc I Sem

June - July 2015

1. Phylum Echinodermata - Type study - Star fish: Digestive system, Water vascular system.

August 2015

1. Type study - Star fish: Reproductive system.

IQAC Co-ordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

Prof. M. S. Goundadkar

B.Sc III Sem

June - July 2015

1. Enzymes: IUB, Mechanism of enzyme action, specificity of enzymes.
2. Reversibility of enzymes action and enzyme inhibitors.
3. A brief account of coenzymes & cofactors.
4. Clinical importance of enzymes.

August 2015

1. Vitamins: Water soluble vitamins (B – complex and C).
2. Fat soluble vitamins (A, D, E and K).
3. Concepts of bioenergetics. Glycolysis.

September 2015

1. Bioenergetics: Kreb's cycle and Electron Transport System.

Prof. M. S. Goundadkar

B.Sc V Sem

Paper I

June - July 2015

1. Comparative Anatomy: Origin, development & structure of Heart in vertebrates.
2. Origin, development & structure of Brain in vertebrates.

August 2015

1. Modes of Evolution : Microevolution, Macroevolution and Mega-evolution.
2. Evolution of Man
3. Evolution of Horse.

September 2015

1. Mesozoic reptiles with a note on Dinosaurs.
2. Zoogeography: Zoogeographical realms of world with climatic conditions.
3. A brief account of Wallace's line.

Prof. M. S. Goundadkar

B.Sc V Sem

Paper II

June - July 2015

1. Sex Determination: Chromosomal mechanism of sex determination.
2. Genic balance theory, Gynandomorphs, and intersexes.
3. Syndromes in human – Klinefelter and Turners.
4. Environmental and hormonal effects on determination of sex.

August 2015

1. Sex Linked Inheritance in Drosophila and Man.
2. Haemophilia and colour blindness in Man
3. Sex linkage in poultry.
4. Y linked genes in man.
5. Mutations- Chromosomal aberrations, Molecular basis of gene mutation & types.

September 2015

1. Human Genetic disorders.
2. Inborn errors of metabolism: Albinism, Phenyl ketonuria , Alkaptonuria, Sickle cell anaemia, Thalassemia, Huntington's Chorea & Eugenics.
3. Genetic Code and Protein Biosynthesis : Properties of genetic code an mechanism of biosynthesis.
4. Woobie hypothesis.

Month-wise Syllabus Distribution for 2015-16

Prof. A. P. Rajput

B.Sc I Sem

June - July 2015

1. Phylum Echinodermata - General characters & Classification up to classes.

August 2015

1. Phylum Mollusca - General characters & Classification up to classes.

Prof. A. P. Rajput

B.Sc III Sem

June - July 2015

1. Nervous Coordination: Structure and propagation of nerve impulse in medullated and nonmedullated nerve.
2. Synaptic transmission and Neuromuscular junction.
3. Neuro transmitters and their importance.
4. Bioluminescence: Light production in Bioluminescent organisms.

August 2015

1. Endocrine system: Functions of Human endocrine glands - Pituitary, thyroid , thymus, parathyroid, pancreas, adrenals.

September 2015

1. Functions of Human endocrine glands - testes, ovaries.
2. Immunology: Bone marrow, thymus, spleen - Payer's patches – T and B cells - Types and Significance.
3. Antigens and Antibodies.
4. Structure of Immunoglobins, G (Ig G) and Immunization.

Prof. A. P. Rajput

B.Sc V Sem

Paper I

June - July 2015

1. Evolution, Paleontology and Zoogeography: The Solar System
2. Origin of Earth its theories, Origin of life.
3. Continental Drift and its biological significance.

August 2015

1. Dating the Distant Past: Relative time scale, Radiometric Dating and The Geological Time Scale.
2. Fossils: Definition, Kind of fossils, How fossils are formed, Methods of preservation.

September 2015

1. Connecting links and Living fossils. The importance of fossils.
2. Sources of Variations in population- Population: Gene Pool, Gene Frequency.
3. Variations - gene mutation, chromosomal mutation, transposons and recombination.

Prof. A. P. Rajput

B.Sc V Sem

Paper II

June - July 2015

1. Fundamentals of Biostatistics. Preliminary Concepts.
2. Frequency distribution
3. Graphical representation of Data
4. Measures Central Tendency: Mean, Median and Mode.

August 2015

1. Measure of variation
2. Probability
3. Chi-Square Test
4. F- test
5. Z- test
6. Student 't' test

September 2015

1. Methods of studying Animal behavior.

Month-wise Syllabus Distribution for 2015-16

Dr. P. A. Deshpande

B.Sc I Sem

June - July 2015

1. Phylum Annelida - General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals. Digestive system, Excretory system, Circulatory system and Reproductive system.

August 2015

1. Phylum Arthropoda - General characters & Classification up to classes.
2. Type study - Cockroach: Externals, Digestive system, Respiratory system, Nervous system, Reproductive system.

September 2015

1. Life history of Cockroach.
2. Mouth parts of Cockroach and House fly.
3. Phylum Mollusca Type study - *Pila globosa*: Externals, digestive system.
4. Respiratory system, Excretory system, Nervous system & Reproductive system.

October 2015

1. Type study - *Pila globosa*: Nervous system, Reproductive system.

Dr. P. A. Deshpande

B.Sc V Sem

Paper I

June-July 2015

1. Theories of Organic Evolution: Lamarckism, Darwinism, Muration Theory and Modern Synthesis Theory.

August 2015

1. Comparative Anatomy: Origin, development & structure of Heart in vertebrates.
2. Origin, development & structure of Brain in vertebrates.

September 2015

1. Comparative account of brain in vertebrates.
2. Origin, development, structure and comparative account of Urinogenital system in vertebrates.

October 2015

1. Origin, development & structure of Integument in vertebrates.

Dr. P. A. Deshpande

B.Sc V Sem

Paper II

June-July 2015

1. Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Types of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.
3. Molecular biotechnology: Genetic engineering, Isolation of DNA.

August 2015

1. Molecular biotechnology: , Gene cloning, Vectors, Restriction enzymes, Polymerase Chain Reaction (PCR).
2. Diagnosis of hereditary diseases, DNA fingerprinting.

September 2015

1. Applications of biotechnology: Agricultural applications- Improvements in crop yield.
2. Industrial applications: Ethanol production, Food processing, Food fermentors & Industrial enzymes.
3. Environmental Applications: Cleaning up environmental pollutants, Bioremediation.

October 2015

1. Medical Applications: Gene testing, Gene therapy, Drug discovery, Tissue engineering.
2. Diagnosis of inherited disorders, personal identification.

G. S. SCIENCE COLLEGE
SUBJECT : ZOOLOGY
MONTHWISE SYLLABUS DISTRIBUTION – 2015-16

PROFESSOR P.P.NAIK

BSc. Ist Sem

JUNE – JULY	
Phyllum Porifera	General characters Classification upto classes Type study sycon – structure and life history
AUGUST	
Phyllum Porifera	Canal system in Porifera Spicules in Porifera Spongin fibres Gemules in sponges
Phyllum Platihelminthes	General characters
SEPTEMBER	
Phyllum Platihelminthes	Classification upto classes Structure Reproductive system Life history of Taenia solium Parasitism and parasitic adaptions in Taenia solium and fasciola hepatica
OCTOBER	
Phyllum Aschelminthes	General characters classification upto classes Structure and life history of Ascaris Parasitic adaptations of Wuchereria bancrofti, Paragonimus westermani and Schistosoma haematobium

G. S. SCIENCE COLLEGE
SUBJECT : ZOOLOGY
MONTHWISE SYLLABUS DISTRIBUTION

PROFESSOR P.P.NAIK

BSc. IIIrd Sem

JUNE – JULY

Physiology of Digestion
Digestion and absorption of proteins, carbohydrates and fats
Role and regulation of digestive enzymes
Concept of balanced diet
Physiology of respiration
Transport of Oxygen and Carbon dioxide
Chloride shift
Respiratory pigments and respiratory quotient

AUGUST

Physiology of circulation
Neurogenic and Myogenic heart
Structure, function and regulation of myogenic heart
Blood pressure and heart beats and heart sounds
Physiology of excretion – Ammonotelism
Ureotelic and Uricotelic excretion with examples
Physiology of urine formation in man
Ornithine cycle

SEPTEMBER

Muscle contraction
Ultra structure of striated muscle
Role of myosin, actin, tropomyosin and tropionin
Mechanism of muscle contraction –sliding filament theory
Chemical changes during muscle contraction
Structure and function of neuromuscular junction

OCTOBER

Bioluminescence –light production in bioluminescent organisms

G. S. SCIENCE COLLEGE
SUBJECT : ZOOLOGY
MONTHWISE SYLLABUS DISTRIBUTION

PROFESSOR P.P.NAIK

BSc. Vth Sem Paper II

JUNE – JULY

Genetics — Introduction
Heredity and environment
Definition of genotype, phenotype
Mendel and his contribution
Monohybrid cross and problems

AUGUST

Genetics — Dihybrid cross and problems
Interaction of genes — Supplementary factors-comb pattern in fouls
Dominant epistasis
Plumage color in Leghorn and Wyandotte
Recessive epistasis
Coat color in sweet peas

SEPTEMBER

Complementary factor
Flower color in sweet peas
Lethal genes
Coat colour in mice

Multiple alleles
ABO bloodgroup and Rh factor in human

OCTOBER

Linkage and crossing over
Linkage in Drosophila
Significance of crossing over
Brief account of genetic maps of chromosomes

Month-wise Syllabus Distribution for 2015-16

Prof. A. A. Halgekar

B.Sc I Sem

June 2015

1. Principles of Animal Taxonomy.
2. Systems of Classification - Artificial, Natural & Phylogenic systems.
3. Concept of Species.
4. Binomial nomenclature, its rules and Linnaean hierarchy.
5. Definitions of Species, Genus, Family, Order, Class & Phylum.

July 2015

1. General characters of phylum Protozoa.
2. Classification of phylum Protozoa up to classes.
3. Type study:- *Plasmodium vivax* : Structure and Life history.
4. Parasitism, pathogenic effects and control measures of *Entamoeba hystolytica*.

August 2015

1. Parasitism, pathogenic effects and control measures of *Trypanosoma gambiense*.
2. General characters of phylum Coelenterata.
3. Classification of phylum Coelenterata up to classes.
4. Structure of Obelia.

September 2015

1. Life history of Obelia.
2. Polymorphism.

October 2015

1. Life history of *Plasmodium vivax*.

Prof. A. A. Halgekar

B.Sc III Sem

June 2015

1. Gametogenesis - Spermatogenesis.
2. Gametogenesis - Oogenesis.

July 2015

1. Process of Fertilization.
2. Types of eggs & cleavage.
3. Development of Frog.
4. Development of Frog - Organogenesis.

August 2015

1. Development of Chick - Structure of egg.
2. Blastula of chick.
3. Gastrula of chick.
4. Chick embryo - 18, 24 & 48 hrs.

September 2015

1. Foetal membranes & their significance.
2. Placenta type - Structure & function.
3. Human development - up to Gastrula.

October 2015

1. Modern trends in Human Reproduction - IVF, GIFT and Surrogate mother.

Prof. A. A. Halgekar

B.Sc V Sem

Paper I

June 2015

1. Wildlife in India.
2. Causes for the depletion of wildlife.
3. Problems of wildlife management in India.
4. Problems of wildlife management in India.

July 2015

1. IUCN, WWF, Bombay Natural History Society.
2. Indian Board for Wild Life.
3. Red Data Book.
4. CITES.

August 2015

1. Wild Life Act 1972 and its amendments.
2. Project Tiger.
3. Biosphere Reserve.
4. Wild Life Conservation Techniques.

September 2015

1. Wild Life Conservation methods and measures.
2. Natural Selection.
3. Evolutionary forces (Mutation).

October 2015

1. Evolutionary forces - Recombination.
2. Evolutionary forces - Gene pool and gene frequency.

Department of Zoology

Distribution of Syllabus (2015-16)

B. Sc. I Semester

Prof. A. A. Halgekar (13 hrs)

Taxonomy and Protozoa — (4 hrs +5 hrs)

Coelenterata — (4 hrs)

Prof. P. P. Naik (13 hrs)

Porifera — (5 hrs)

Platyhelminthes and Aschelminthes — (4 hrs + 4 hrs)

Dr. P. A. Deshpande (16 hrs)

Annelida and Arthropoda — (5hrs + 7 hrs)

Mollusca and Echinodermata — (2 hrs + 2 hrs)

(General characters and Classification up to Classes)

Ms. A. P. Rajput (4 hrs)

Type study (*Pila globosa*) — (4 hrs)

Ms. M. S. Goundadkar (4hrs)

Type study (Star fish) — (4 hrs)

B. Sc. III Semester

Prof. A. A. Halgekar (12 hrs)

Developmental Biology:

Types of eggs, Cleavage and Evodevo concept to Modern trends in Human Reproduction-Surrogate mother. — (12 hrs)

Prof. P. P. Naik (13 hrs)

Animal Physiology and Biochemistry:

Proteins, Physiology of Digestion, Physiology of Respiration, Circulation, Physiology of Excretion and Muscle Contraction. — (13 hrs)

Ms. A. P. Rajput (12 hrs)

Developmental Biology:

Brief account of Gametogenesis and Process of fertilization — (2 hrs)

Animal Physiology and Biochemistry:

Nervous coordination, Endocrine system and Immunology. — (2+6+2 hrs)

Ms. M. S. Goundadkar (13 hrs)

Animal Physiology and Biochemistry:

Enzymes, Vitamins and Bioenergetics. — (4+4+5 hrs)

B. Sc. V Semester (Paper 5.1)

Prof. A. A. Halgekar (12 hrs)

Zoogeography and Wildlife Conservation.	(3 + 9 hrs)

Dr. P. A. Deshpande (13 hrs)

Community Ecology and Population Ecology	(2 + 2 hrs)
Modes of Evolution.	(2 hrs)
Evolution of Man and Horse.	(2 hrs)
Palaeontology.	(3 hrs)

Ms. A. P. Rajput (14 hrs)

Evolution:	
The solar system to Hardy-Weinberg equilibrium	(14 hrs)

Ms. M. S. Goundadkar: (11hrs)

Ecology:	
Earth as living Planet to Biogeochemical cycles	(11 hrs)

B. Sc. V Semester (Paper 5.2)

Prof. P. P. Naik (13 hrs)

Genetics:	
Introduction to Linkage and crossing over	(13 hrs)

Dr. P. A. Deshpande (14 hrs)

Biotechnology (Entire Topic)	(14 hrs)

Ms. A. P. Rajput (10 hrs)

Biostatistics (Entire Topic)	(10 hrs)

Ms. M. S. Goundadkar (13 hrs)

Genetics:	
Sex determination to Genetic code and Biosynthesis	(13 hrs)

Month-wise Syllabus Distribution for 2015-16

Prof. M. S. Goundadkar

B.Sc II Sem

December 2015

1. Discussion of the syllabus.

January 2016

1. General Characters and Classification of Amphibia up to orders.

February 2016

1. Type Study: Frog - Study of Externals, Digestive system.

March 2016

1. Type Study: Frog - Study of Reproductive system.
2. Endoskeleton of frog.

April 2016

1. Axolotl larva and its significance.

Prof. M. S. Goundadkar

B.Sc IV Sem

December 2015

1. Cell Division - Introduction

January 2016

1. Cell Division: Mitosis and Meiosis

February 2016

1. Cellular ageing & Cell death
2. Concept of aging theories
3. Intracellular changes, free radicals, somatic nutrition, immunological
4. Cloned selection & errors in DNA & RNA functions.

March 2016

1. Extracellular changes
2. Cell death: Apoptosis, Necrosis. Definition and Significance.
3. Cancer cell: Theories/Hypothesis regarding causes of cancer. Extrinsic factors, physical, chemical & biological.

April 2016

1. Intrinsic factors, somatic mutations, oncogenes & aging related phenomenon.
2. Ethology (Animal Behaviour): Introduction.

Prof. M. S. Goundadkar

B.Sc VI Sem

Paper - I

December 2015

1. Pearl culture: Introduction.

January 2016

1. Pearl producing molluscans. Pearl formation.
2. Pearl producing sites in India.

February 2016

1. Quality & Composition of pearl.
2. Pearl industry: Artificial insertion of nucleus

March 2016

1. Brief technique of fish culture (Indian major carps)
2. Prawn fisheries, Species of prawns.

April 2016

1. Culture of freshwater & marine prawns.

Prof. M. S. Goundadkar

B.Sc VI Sem

Paper - II

December 2015

1. Techniques of Cell fraction & centrifugation.
2. Homogenization.

January 2016

1. Cell tissue disruption.
2. Ultra centrifugation.
3. Molecular & Recombinant DNA methods - Isolation and purification of DNA, RNA & proteins
4. Basics of Recombinant technology
5. Principles of Molecular cloning & DNA chips, DNA sequencing, PCR.

February 2016

1. *In situ* hybridization, DNA microchips.
2. Gene therapy in humans.

March 2016

1. Genetic Engineering in animals: Transgenic mouse, transgenic sheep.
2. Genetically altered fish.
3. Gene therapy in humans.

April 2016

1. Histochemical & Immunization techniques: ELISA, RIA, Flow Cytometry.

Month-wise Syllabus Distribution for 2015-16

Prof. A. P. Rajput

B.Sc II Semester

December 2015 - January 2016

1) **Reptilla** - Indian poisonous and non-poisonous snakes.
2) First aid treatment given during snake bite.

March 2016

1) Poison apparatus.
2) Venom, anti-venom.

Prof. A. P. Rajput

B.Sc IV Semester

December 2015 - January 2016

1) Parental care in fishes.
2) Parental care in amphibians and birds.
3) Animal Communication: Chemical, visual and audio.
4) Functions of signals, odours, sounds and light.

February 2016

1) Types of animal behaviour: Innate behavior, taxes, reflexes, instincts, motivation.
2) Learned behavior: Habituation, imprinting, condition reflexes, insight learning.
3) Biological clock, circadian rhythm.

March 2016

1) Social behavior: Types of animal society, Colony in honey bees, Monkey troops.
2) Territoriality and Courtship behavior.

April 2016

1) Application of ethological techniques (Ethogram) to human behavior.

Prof. A. P. Rajput

B.Sc VI Semester

Paper - I

December 2015 - January 2016

1) Sericulture: Silkworm and Life History of *Bombyx mori*.
2) Rearing of silkworm: Grainage management, Emergence of moth & fertilization.
3) Egg laying, hatching and moulting of silkworm, spinning of cocoons.
4) Cocoon processing, stifling and spinning silk filiature.

February 2016

1) Silkworm diseases: Muscardine, Grasserie, Flacherie & Pebrine.
2) Study of non-mulberry silkworms in brief.
3) Apiculture: Species of honey bees.

March 2016

1) Apiculture: Social organization of honey bees.
2) Life history, methods of bee keeping.
3) Products of bees and their economic importance.
4) Preservation and processing methods of fishes and their products.

April 2016

1) Composition and properties of Lac. Economic importance of Lac.

1

Prof. A. P. Rajput

B.Sc VI Semester

Paper - II

December 2015 - January 2016

1) Definition, Goal of Bioinformatics.
2) Sequencing – Sequence analysis and Structure analysis.
3) Applications of Bioinformatics.
4) Classification of Biological Data Bases. Characteristic of FASTA (Fast Alignment)

February 2016

1) Characteristics of BLAST (Basic Local Alignment Search Tool).
2) Aims and goals of Human Genome Project. Main findings of Human Genome Project.
3) Gene prediction and tools for gene prediction.
4) Comparative genomics.

March 2016

1) Tool for comparative genomics VISTA.
2) Proteomics: Two dimensional Gel Electrophoresis
3) Mass spectrometry , SDS – PAGE.
4) Structure of protein – Primary, Secondary, Tertiary and Quarternary.

April 2016

1) Protein structure prediction.
2) Application of Proteome analysis.
3) The future of Proteomics.

Month-wise Syllabus Distribution for 2015-16

Dr. P. A. Deshpande

B.Sc II Sem

December 2015 - January 2016

1. Chordata: General Characters and Classification.
2. Sub-phylum - Hemichordata: Characters & organization of Balanoglossus.
3. Sub-phylum - Urochordata: Characters & organization of Herdmania.

February 2016

1. Subphylum - Cephalochordata: Characters & organization of Branchiostoma.
2. Cyclostomata - Characters & general organization of Petromyzon & Myxine.

March 2016

1. Pisces - General characters & Classification of Pisces up to orders.
2. General characters of Chondrichthys and Osteichthys.
3. Type study - Scoliodon: Externals, Digestive system.

April 2016

1. Type study - Scoliodon: Reproductive system.
2. Fish Migration.

Dr. P. A. Deshpande

B.Sc VI Sem

Paper - I

December 2015 - January 2016

1. Animal Husbandary: Maintenance, Breeds, Diseases, Products and Byproducts of the Sheeps.

February 2016

1. Animal Husbandary: Maintenance, Breeds, Diseases, Products and Byproducts of Goats and Cows.

March 2016

1. Animal Husbandary: Maintenance, Breeds, Diseases, Products and Byproducts of the Buffalos.
2. Composition and Nutritive value of Milk.
3. Lac culture: Classification of Lac insect (*Tachardia lacca*), Life history of Lac insect. Host plants. Cultivation of Lac.

April 2016

1. Composition and properties of Lac & Economic importance.

Dr. P. A. Deshpande

B.Sc VI Sem

Paper - II

December 2015 - January 2016

1. Introduction: History, Name of Tools and Techniques in Nanotechnology.
2. Nanobiology: Applications of Nano in biology.

February 2016

1. Nanomedicines: Nano drug Administration, Diagnostics and Therapeutic Applications.
2. Nucleic Acid Blotting and their applications - Southern Blotting, Northern Blotting, Western Blotting.

March 2016

1. Biophysical Methods – Brief note of NMR, ESR Spectroscope and their uses.
2. Radioisotopes Techniques – Autoradiograph.
3. Types of radioactive decay- Alpha, Beta emission & Gamma rays.
4. Geigar-Mullar Counter, Liquid Scintillator.

April 2016

1. Biological applications of Radioisotopes.
2. A brief note on the use of ECG, PET, MRI, CAT.
3. Single Neuron recorder in Electro Physiological methods.

Month-wise Syllabus Distribution for 2015-16

Prof. P. P. Naik

B.Sc II Semester

December 2015 - January 2016

1) Study of Comparative anatomy.
2) Origin and development of heart.
3) Structure of heart of Fishes, Amphibia, Reptiles and Aves.

February 2016

1) Study of Structure of heart of mammals.
2) Origin, development and structure of brain of Fishes, Amphibia, Reptiles, Aves and Mammals.

March 2016

1) Revision of portion.

Prof. P. P. Naik

B.Sc IV Semester

December 2015 - January 2016

1) Cell Biology – Ultra structure of animal cell. Cell theory and cell cycle.
2) Ultra structure and function of cell organelles:
   a) Plasma membrane
   b) Endoplasmic reticulum.
   c) Ribosomes
   d) Golgi complex

February 2016

1) Ultra structure and function of cell organelles:
   a) Lysosomes
   b) Mitochondria
   c) Nucleus
2) Chromosomes – Ultra structure of chromosomes & types of chromosomes.

March 2016

1) Types of chromosomes.
2) A brief account of Histochemical techniques.
3) Stains – Cytoplasmic and Nuclear stains.
4) Preparation of histochemical slides.

April 2016

1) Revision of portion.

Month-wise Syllabus Distribution for 2015-16

Prof. A. A. Halgekar

B.Sc II Semester

December 2015 - January 2016

1) General Characters and Classification of Aves up to orders.
2) **Type study – Pigeon** - Externals, Digestive system.
3) Type study – **Pigeon** - Reproductive system (Male and Female).

February 2016

Continuation of Aves....
1) Bird migration.
2) Flight adaptations.
3) Beak & Foot modification.
4) General characters and classification of Mammalia up to orders.

March 2016

1) Type study – **Rat** - Externals, Digestive system.
2) Type study – **Rat** – Brain and Excretory system.
3) Type study – **Rat** – Reproductive system (Male and Female).

April 2016

1) Monotremes - Distinctive characters.
2) Unique Reptilian and Mammalian features.
3) Affinities of the Ornithorhynchus and Echidna.
4) Metatherians - Distribution, habits and salient features.

Prof. A. A. Halgekar

B.Sc IV Semester

December 2015 - January 2016

1) Study of Histological Structure and functions of following mammalian organs:
   a) Tongue
   b) Salivary glands
   c) Stomach
   d) Intestine

February 2016

1) Study of Histological Structure and functions of following mammalian organs:
   a) Liver
   b) Pancreas
   c) Kidney

March 2016

1) Study of Histological Structure and functions of following mammalian organs:
   a) Adrenal
   b) Pituitary
   c) Ovary

April 2016

1) Study of Histological Structure and functions of following mammalian organs:
   a) Testis
   b) Thyroid

Prof. A. A. Halgekar

B.Sc VI Semester

Paper - II

December 2015 - January 2016

1) Physical and Chemical methods of Sterilization and other Techniques.
2) Classification of Bacteria –based on shapes and structure (anatomy).
3) Bacterial reproduction and growth.
4) Virus - Morphology and chemical properties.
5) Classification and nomenclature of virus.

February 2016

1) DNA and RNA viruses.
3) Fungi and Yeast - Structure, classification and reproduction.
4) Fermentation: Types of Fermentor and basic functions.
5) Methods of preservations.

March 2016

1) Criteria for the selection of microorganisms.
2) Production of antibiotics - Penicillin, Streptomycin.
3) Production of antibiotics - Enzyme protease, Riboflavin.

April 2016

1) Normal microbial flora of the human body.
2) Role of microbes in environment.

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. I Sem

June - July 2016

1. Type study-Starfish-External characters

August 2016

1. Digestive system, Water vascular system

September 2016

1. Echinoderm larvae.

October 2016

1. Revision

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. III Sem

June - July 2016

1. Carbohydrates and Lipids Definition, Classification and Biological Significance.Enzymes:
2. IUB, Mechanism of enzyme action, specificity of enzymes, reversibility of enzymes action and enzyme inhibitors.

August 2016

1. A brief account of coenzymes & cofactors.
2. Clinical importance of enzymes.

September 2016

1. VitaminsWater soluble vitamins (B – complexand C)
2. Fat soluble vitamins (A, D, E and K)
3. Concepts of bioenergetics, Glycolysis,

October 2016

1. Bioenergetics: Krebs cycle and Electron Transport System.

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. V Sem

Paper I

June - July 2016

1. Earth as Living -Planet.
2. Sub divisions of ecology,
3. Scope of ecology, Biosphere
4. Abiotic factors- Light, Temperature (Effect on Animals and Plants)

August 2016

1. Biotic Factor
2. Mutualism, Commensalism, Amensialism, Parasitism, Predation
3. Competition, Parasitism

September 2016

1. Habitats- Freshwater habitat — Lotic and Lentic systems
2. Zonation of Sea, Marine Biota, Estuarine ecology, & Mangrooves
3. Terrestrial habitat — A brief account of Biomes.

October 2016

1. Ecological Adaptations — Freshwater, Marine and Terrestrial
2. Biogeochemical Cycles - Principles and concepts of Water,
3. Nitrogen, Carbon, Oxygen cycles

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. V Sem

Paper II

June July 2016

1. Sex Determination: Chromosomal mechanism of sex determination
2. Genic balance theory, Gynandomorphs, and intersexes.
3. Syndromes in human- Klinefelter and Turners

August 2016

1. Environmental and hormonal effects on determination of sex
2. Sex Linked Inheritance in Drosophila and Man Hemophilia and colour blindness in Man Sex linkage in poultry.
3. Y - linked genes in man

September 2016

1. Mutations – Chromosomal aberrations, Molecular basis of gene mutation & types
2. Human Genetics: Human Genetic disorders
3. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell anaemia, Thalassemia, Huntington's Chorea

October 2016

1. Genetic Code and Protein Biosynthesis:
2. Properties of genetic code and Mechanism of biosynthesis.
3. Wooble hypothesis.

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Dr. A. P. Rajput

B. Sc. I Sem

June - July 2016

1. Type study *Pila globosa* Externals characters

August 2016

1. Digestive system. Respiratory system.

September 2016

1. Nervous system & Reproductive system.

October 2016

Revision

Name of Faculty: Dr. A. P. Rajput

B. Sc. III Sem

June - July 2016

1. Brief account of Gametogenesis and Fertilization in animals
2. Endocrine system - Functions of Endocrine glands. Ovary and Testis.

August 2016

1. Functions of Endocrine glands: Thyroid, Parathyroid, Pancreas and Adrenal.
2. Pituitary and Hypothalamo-hypophyseal axis.

September 2016

1. Nervous Coordination: Structure and propagation of nerve impulse in medullated and Non-medullated nerve.
2. Synaptic transmission and neuromuscular junction.
3. Neurotransmitters and their importance.

October 2016

1. Immunology: Bone marrow, thymus, spleen.
2. Peyers patches, T and B cells: types and significance.
3. Antigens and antibodies.
4. Structure of Immunoglobulins G (Ig G) and Immunization.

Name of Faculty: Dr. A. P. Rajput

B. Sc. V Sem

Paper – I

June - July 2016

1. Evolution. The Solar SystemOrigin of Earth . Origin of Life and its theories

August 2016

1. The geological time scale
2. Fossils: Definition and Kinds of fossils. How fossils are formed, Methods ofPreservation.
3. Connecting links and Living fossils. The importance of fossils

September 2016

1. Theories of Organic Evolution : Lamarkism, Darwinism, Mutation Theory and the Modern Synthesis Theory;
2. Population gene Pool, Gene Frequency.

October 2016

1. Variations — gene mutation, chromosomal mutation;
2. Isolation and recombination. Genetic drift, Hardy-Weinberg equilibrium

Name of Faculty: Dr. A. P. Rajput

B. Sc. V Sem

Paper – II

June - July 2016

1. Biostatistics: Fundamentals of Biostatistics
2. Preliminary Concepts.

August 2016

1. Frequency distribution
2. Graphical presentation of Data

September 2016

1. Measures of Central Tendency - Mean, Median and Mode
2. Measures of variation

October 2016

1. Probability, Chi-Square Test

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Dr. P. A. Deshpande

B.Sc. I Sem

June - July 2016

1. Phylum Annelida- General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.
3. Phylum Mollusca- General characters & classification up to classes.

August 2016

1. *Pheretimaposthuma*: Circulatory system and Reproductive system.
2. Phylum Arthropoda- General characters & classification up to classes.
3. Type study - Cockroach: Externals, Digestive and Respiratory system.

September 2016

1. Type study - Cockroach: Nervous system, Reproductive system.
2. Life history of cockroach
3. Phylum Echinodermata - General characters & classification up to classes.

October 2016

1. Mouthparts of cockroach and housefly.

Name of Faculty: **Dr. P. A. Deshpande**

B.Sc. V Sem

Paper – I

June - July 2016

1. Modes of evolution: Micro evolution, Macro evolution and Mega evolution
2. Community Ecology-Community structure, Ecological niches, Edge effect, Stratification, Ecotone.

August 2016

1. Evolution of Man and Horse.

September 2016

1. Palaeontology: Mesozoic reptiles with a note on Dinosaurs.
2. Population Ecology: Density, natality, mortality.

October 2016

1. Population Ecology: Age distribution, Population growth, types and curves.

Name of Faculty: Dr. P. A. Deshpande

B.Sc. V Sem

Paper – II

June - July 2016

1. Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Types of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.
3. Molecular biotechnology: Genetic engineering.

August 2016

1. Molecular biotechnology: Isolation of DNA, Gene cloning, Vectors, Restriction enzymes,
2. Polymerase Chain Reaction (PCR), DNA fingerprinting.

September 2016

1. Agricultural applications of biotechnology - Improvements in crop yiel
2. Industrial applications of biotechnology: Ethanol production, Food processing, Food fermentors& industrial enzymes.
3. Environmental applications- Cleaning up environmental pollutants and bioremediation.

October 2016

1. Medical applications of biotechnology: Gene testing, Gene therapy, Drug discovery,
2. Diagnosis of inherited disorders, Personal identification.

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Prof. P. P. Naik

B. Sc. I Sem

June-July 2016

1. Phylum Porifera: General characters and classification up to classes.
2. Type Study – Sycon: Structure and Life history, Canal systems.

August 2016

1. Spicules, Spongin fibres and Gemmule.
2. Phylum Platyhelminthes – General characters and classification up to classes.

September 2016

1. Type study - *Taenia solium*: Structure, Reproductive system & Life history.
2. Parasitism and parasitic adaptations in *Taenia solium*&*Fasciola hepatica*.

October 2016

1. Phylum Aschelminthes: General characters and classification up to classes.
2. Structure, life history of *Ascaris*.
3. Parasitism adaptations of *Wuchereria bancrofti*, *Paragonimus westermani* & *Schistosoma haematobium*.

Name of Faculty: **Prof. P. P. Naik**

B. Sc. III Sem

June July 2016

1. Proteins: Definition, Classification and Biological Significance.
2. Physiology of Digestion: Digestion of Proteins,
3. Carbohydrates and fats.

August 2016

1. Absorption of food. Regulation and role of digestive system enzymes.
2. Balanced diet Physiology of Respiration: Transport of Oxygen and Carbon-di-oxide
3. Chloride shift, Respiratory Pigments and RQ.

September 2016

1. Circulation: Neurogenic and Myogenic Hearts.
2. Structure, function & regulation of Myogenic heart
3. Blood pressure.
4. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.
5. Physiology of Urine formation in Man. Ornithine cycle.

October 2016

1. MuscleContraction: Ultra structure of striated muscle.
2. The role of myosin, actin, tropomyosin and tropionin.
3. Mechanism of muscle contraction - Sliding filament theory.
4. Chemical changes during muscle contraction. Structure and function of neuromuscularjunction.

Name of Faculty: Prof. P. P. Naik

B. Sc. V Sem

Paper – II

June- July 2016

1. Genetics – Introduction. Definition of genetical terminologies (Genotype, phenotype, alleles).
2. Mendel and his contribution.
3. Monohybrid and Dihybrid cross (laws).

August 2016

1. Interaction of genes: Supplementary factors – Comb pattern in fowls.
2. Dominant Epistasis: Plumage colour in Leghorn and Wyandotte.
3. Recessive Epistasis: Coat colour in sweet peas.

September 2016

1. Complimentary Factors – Flower colour in sweet peas.
2. Lethal genes – Coat colour in mice.
3. Multiple alleles: ABO blood group and Rh factor in human.

October 2016

1. Linkage and Crossing over - Linkage in Drosophila, Significance of Crossing over.

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Prof. A. A. Halgekar

B. Sc. I Sem

June - July 2016

1. Taxonomy: Binomial nomenclature and concept of Species.
2. Protozoa: General characters & Classification up to classeswith examples.

August 2016

1. General Topics-Locomotion and Nutrition in Protozoa

September 2016

1. Coelenterate: General characters & Classification up to classeswith examples.

October 2016

1. Structure & life history of Obelia.
2. Polymorphism.

Name of Faculty: **Prof. A. A. Halgekar**

B. Sc. III Sem

Paper – I

June - July 2016

1. Types of Eggs, Cleavage patterns.
2. Frog development up to Organogenesis and Metamorphosis.

August 2016

1. Chick development up to Gastrula & Organogenesis upto Neurulation.
2. Extra embryonic membranes in birds & their significance.

September 2016

1. Placenta types and Structure and Functions in mammals

October 2016

1. Modern trends in Human Reproduction – IVF, GIFT, and Surrogate Mother

Name of Faculty: Prof. A. A. Halgekar

B. Sc. V Sem

Paper – I

June - July 2016

1. Zoogeography: Zoogeographical realms of world.
2. A brief account of Wallace's line

August 2016

1. Wildlife Conservation :Wild life conservation methods
2. Wildlife in India,Causes for the depletion of wildlife.

September 2016

1. Wild Life Conservation Techniques, methods and measures
2. Brief account of ; IUCN, WWF, Bombay Natural History Society,
3. Indian Board for Wild Life, Red Data Book.

October 2016

1. Wild Life Act 1972 and its amendments in India,CITES.
2. Project Tiger and Biosphere Reserve.

Month-wise Syllabus Distribution for 2016-17

Name of faculty: Prof. M. S. Goundadkar

B. Sc. II Semester

December 2016 - January 2017

1. Amphibia- General Characters & Classification up to orders with suitable examples.

February 2017

1. Type study: Frog - Externals, Digestive system, Reproductive system.
2. Axolotl larva & its significance.

March 2017

1. Endoskeleton of frog.

April 2017

Revision

Name of faculty: **Prof. M. S. Goundadkar**

B. Sc. IV Semester

December 2016 - January 2017

1. Cell division Types: Mitosis and Meiosis

February 2017

1. Concept of Aging theories: Intracellular changes, free radicals.
2. Somatic nutrition, immunological, clonal selection.
3. Errors in DNA and RNA functions. Extracellular changes
4. Cell death: Apoptosis, Necrosis, definition and significance.

March 2017

1. Cancer cell: Characteristics
2. Theories/ Hypothesis regarding causes of cancer.

April 2017

1. Introduction to ethologyDefinition, Scope of Ethology. Brief contributions of Konard Lorenz, Niko Tinbergen and Karl Von Frisch.

Name of faculty: **Prof. M. S. Goundadkar**

B. Sc. VI Semester

Paper - I

December 2016 - January 2017

1. Aquaculture : Prawn Fisheries, Species of Prawns, Culture of freshwater and marine Prawns, Preservation and processing of Prawns.

February 2017

1. Pearl Culture : Pearl producing molluscans, Pearl formation, PearlproducingSites in India.
2. Quality and composition of Pearl.

March 2017

1. Pearl Industry:Artificial Insertion of nucleus
2. Brief technique of Fish culture, Preservation of fishes and theirByproducts

April 2017

1. Poultry : Breeds of fowl, Diseases of poultry,

Name of faculty: **Prof. M. S. Goundadkar**

B. Sc. VI Semester

Paper - II

December 2016 - January 2017

1. Microbiology: Role of microbes in environment
2. Methods in Biology
3. Techniques of Cell fraction and Centrifugation.

February 2017

1. Homogenization and cell tissue disruption
2. Centrifugation. Ultra centrifugation.

March 2017

1. DNA Sequencing, *Insitu* Hybridization, DNA microchips
2. Genetic Engineering in animals-
3. Transgenic Mouse, Transgenicsheep.
4. Genetically Altered Fish.Mosquito and Drosophila.

April 2017

1. Gene therapy in Humans
2. Histochemical and Immunization Techniques.
3. ELISA, RIA, Flow Cytometry

Month-wise Syllabus Distribution for 2016-17

Name of faculty: Dr. A. P. Rajput

B. Sc. II Semester

December 2016 - January 2017

1)Reptilia - Indian poisonous and non-poisonous snakes.
2) First aid treatment given during snake bite.

March 2016

1) Poison apparatus.
2) Venom and anti venom.

Name of faculty: Dr. A. P. Rajput

B. Sc. IV Semester

December 2016 - January 2017

1. Parental care in fishes.
2. Parental care in amphibians and birds.
3. Animal Communication: Chemical, visual and audio.

February 2017

1. Functions of signals, odours, sounds and light.
2. Types of animal behaviour:Innate behavior, taxes, reflexes, instincts, motivation.
3. Learned behavior: Habituation, imprinting, condition reflexes, insight learning.

March 2017

1. Biological clock, circadian rhythm.
2. Social behavior: Types of animal society, Colony in honey bees, Monkey troops.
3. Territoriality and Courtship behavior.

April 2017

1. Application of ethological techniques (Ethogram) to human behavior.

Name of faculty: **Dr. A. P. Rajput**

B. Sc. VI Semester

Paper - I

December 2016 - January 2017

1. Apiculture: Social organization of honey bees.
2. Apiculture: Species of honey bees.
3. Life history, methods of bee keeping.

February 2017

1. Products of bees and their economic importance.
2. Sericulture: Silkworm and Life History of *Bombyx mori*.
3. Rearing of silkworm: Grainage management, Emergence of moth & fertilization.

March 2017

1. Egg laying, hatching and moulting of silkworm, spinning of cocoons.
2. Silkworm diseases: Muscardine, Grasserie, Flacherie & Pebrine.
3. Study of non-mulberry silkworms in brief.

April 2017

1. Cocoon processing, stifling and spinning silk filature.

Name of faculty: **Dr. A. P. Rajput**

B. Sc. VI Semester

Paper - II

December 2016 - January 2017

1. Definition, Goal of Bioinformatics.
2. Sequencing – Sequence analysis and Structure analysis.
3. Applications of Bioinformatics.
4. Classification of Biological Data Bases. Characteristic of FASTA (Fast Alignment)
5. Aims and goals of Human Genome Project. Main findings of Human GenomeProject.

February 2017

1. Gene prediction and tools for gene prediction.
2. Characteristics of BLAST (Basic Local Alignment Search Tool).
3. Tool for comparative genomics VISTA.
4. Proteomics: Two dimensional Gel Electrophoresis
5. Mass spectrometry, SDS – PAGE.

March 2017

1. Microscopy: Compound microscope and its functions.
2. Dark field microscope. Fluorescent microscope
3. Phase contrast microscope, Electron microscope
4. Comparative genomics.
5. Structure of protein – Primary, Secondary, Tertiary and Quarternary.

April 2017

1. Protein structure prediction.
2. Application of Proteome analysis.
3. The future of Proteomics.

Month-wise Syllabus Distribution for 2016-17

Name of Faculty: Dr. P. A. Deshpande

B. Sc. II Sem

December 2016 - January 2017

1. Chordata: General Characters and Classification.
2. Sub-phylum: Hemichordata - Characters & organization of Balanoglossus.

February 2017

1. Sub-phylum: Urochordata - Characters & organization of Herdmania.
2. Subphylum: Cephalochordata - Characters & organization of Branchiostoma.

March 2017

1. Cyclostomata - Characters & general organization of Petromyzon & Myxine.
2. Pisces - General characters & Classification of Pisces up to orders.
3. General characters of Chondrichthys and Osteichthys.

April 2017

1. Type study - Scoliodon: Externals, Digestive system.
2. Type study - Scoliodon: Reproductive system.
3. Fish Migration.

Name of Faculty: **Dr. P. A. Deshpande**

B. Sc. VI Sem

Paper - I

December 2016 - January 2017

1. Animal Husbandry: Maintenance, Breeds, Diseases, Products and Byproducts of the Sheeps.

February 2017

1. Animal Husbandry: Maintenance, Breeds, Diseases, Products and Byproducts of Goats.

March 2017

1. Animal Husbandry: Maintenance, Breeds, Diseases, Products and Byproducts of the Cows.
2. Animal Husbandry: Maintenance, Breeds, Diseases, Products and Byproducts of the Buffalos.
3. Composition and Nutritive value of Milk.

April 2017

1. Lac culture: Classification of Lac insect (*Tachardia lucca*), Life history of Lac insect. Host plants. Cultivation of Lac.
2. Composition and properties of Lac & Economic importance.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. VI Sem

Paper - II

December 2016 - January 2017

1. Introduction: History, Name of Tools and Techniques in Nanotechnology.
2. Nanobiology: Applications of Nano in biology.

February 2017

1. Nanomedicines: Nano drug Administration, Diagnostics and Therapeutic Applications.
2. Nucleic Acid Blotting and their applications - Southern Blotting, Northern Blotting, Western Blotting.

March 2017

1. Biophysical Methods – Brief note of NMR, ESR Spectroscope and their uses.
2. Radioisotopes Techniques – Autoradiograph.
3. Types of radioactive decay- Alpha, Beta emission & Gamma rays.
4. Geigar-Mullar Counter, Liquid Scintillator.

April 2017

1. Biological applications of Radioisotopes.
2. A brief note on the use of ECG, PET, MRI, CAT.
3. Single Neuron recorder in Electro Physiological methods.

Month-wise Syllabus Distribution for 2016-17

Name of faculty: Prof. P. P. Naik

B. Sc. II Semester

December 2016 - January 2017

1. Study of Comparative anatomy.
2. Origin and development of heart.
3. Structure of heart of Fishes.

February 2017

1. Structure of heart of Amphibia and Aves.
2. Study of Structure of heart of mammals.
3. Origin, development and structure of brain of Fishes.

March 2017

1. Origin, development and structure of brain of Amphibia, Aves and Mammals.

Name of faculty: **Prof. P. P. Naik**

B. Sc. IV Semester

December 2016 - January 2017

1. Cell Biology – Ultra structure of animal cell. Cell theory and cell cycle.
2. Ultra structure and function of cell organelles:
   Plasma membrane, Endoplasmic reticulum.

February 2017

1. Ultra structure and function of cell organelles:
   Ribosomes
   Golgi complex
   Lysosomes
   Mitochondria
   Nucleus

March 2017

1. Chromosomes – Ultra structure of chromosomes & types of chromosomes.
2. Types of chromosomes.
3. A brief account of Histochemical techniques.
4. Stains – Cytoplasmic and Nuclear stains.

April 2017

1. Preparation of histochemical slides.
2. Revision of portion.

Name of faculty: Prof. P. P. Naik

B. Sc. VI Semester

Paper - I

December 2016 - January 2017

1. Definition, breeds of poultry.
2. Diseases of poultry.
3. Poultry maintenance & byproducts.

February 2017

1. Composition and nutritive value of egg.
2. Vermiculture: Earthworm species used in vermiculture.
3. Vermiculture technique.

March 2017

1. Importance of vermiculture.
2. Insect Pest Management: Natural control and Applied control of pests.
3. Applied control - Mechanical, Physical, Cultural, Legal, Chemical control.
4. Pheromonal and biological control.

April 2017

1. Integrated pest management.
2. Revision of portion.

Month-wise Syllabus Distribution for 2016-17

Name of faculty: Prof. A. A. Halgekar

B. Sc. II Semester

December 2016- January2017

1. General Characters and Classification of Aves up to orders.
2. Type study – Pigeon -Externals, Digestive system.

February 2017

1. Type study – Pigeon -Reproductive system (Male and Female).
2. Bird migration.
3. Flight adaptations.
4. Beaks& Foot modification.

March 2017

1. Type study – Rat -Externals, Digestive system.
2. Rat – Brain and Excretory system.
3. Rat – Reproductive system.

April 2017

1. Monotremes - Distinctive characters.
2. Unique Reptilian and Mammalian features.
3. Affinities of the Ornithorhynchus and Echidna.
4. Metatherians - Distribution, habits and salient features.

Name of faculty: Prof. A. A. Halgekar

B. Sc. IV Semester

December 2016 - January 2017

1. Study of Histological Structure and functions of following mammalian organs:
   a. Tongue
   b. Salivary glands

February 2017

1. Study of Histological Structure and functions of following mammalian organs:
   a. Stomach
   b. Intestine
   c. Liver
   d. Pancreas

March 2017

1. Study of Histological Structure and functions of following mammalian organs:
   a. Kidney
   b. Adrenal
   c. Pituitary

April 2017

1. Study of Histological Structure and functions of following mammalian organs:
   a. Ovary
   b. Testis
   c. Thyroid

Name of faculty: **Prof. A. A. Halgekar**

B. Sc. VI Semester

Paper - II

December 2016 - January 2017

1. Physical and Chemical methods of Sterilization and other Techniques.
2. Classification of Bacteria–based on shapes and structure (anatomy).
3. Bacterial reproduction and growth.

February 2017

1. Virus - Morphology and chemical properties.
2. Classification and nomenclature of virus.
3. DNA and RNA viruses.
4. Fungi and Yeast - Structure, classification and reproduction.
5. Fermentation: Types of Fermentor and basic functions.

March 2017

1. Methods of preservations.
2. Criteria for the selection of microorganisms
3. Production of antibiotics - Penicillin, Streptomycin.

April 2017

1. Production of antibiotics - Enzyme protease, Riboflavin.
2. Normal microbial flora of the human body.
3. Role of microbes in environment.

Month-wise Syllabus Distribution for 2017-18

Name of Faculty: Dr. A. P. Rajput

B. Sc. I Sem

June - July 2017

1. Taxonomy:Binomial nomenclature
2. Concept of Species.

August 2017

1. Platyhelminthes:General characters & Classification up to class with examples.
2. Type Study-*Fasciola hepatica* Externals character.
3. *Fasciola hepatica* - Reproductive system & Lifehistory.

September 2017

1. Parasitic adaptation in Platyhelminthes.
2. Aschelminthes: General characters & classification up to classes with examples.
3. Parasitic adaptations in Aschelminthes.

October 2017

1. Echinodermata: General characters & classification up to classeswith examples.
2. Type study-Starfish-External characters,Digestive system.
3. Star fish- Water vascular system, andEchinoderm larvae.

Name of Faculty: Dr. A. P. Rajput

B. Sc. III Sem

June- July 2017

1. Brief account of Gametogenesis and Fertilization in animals
2. Nervous Coordination: Structure and propagation of nerve impulse in medullated and non-medullated nerve.

August 2017

1. Synaptic transmission and Neuromuscular junction.
2. Neuro transmitters and their importance.

September 2017

1. Endocrine system: Functions of Human endocrine glands.
2. Pituitary, thyroid, thymus, parathyroid, pancreas, adrenals, testes, ovaries

October 2017

1. Immunology: Bone marrow, thymus, spleen - Payer's patches – T and B cells Types and Significance.
2. Antigens and Antibodies.
3. Structure of Immunoglobins G (Ig G) and Immunization

Name of Faculty: **Dr. A. P. Rajput**

B. Sc. V Sem

Paper – I

June - July 2017

1. Evolution- The Solar System
2. Origin of Earth,
3. Origin of Life and its theories

August 2017

1. The geological time scale
2. Fossils: Definition and Kinds of fossils. How fossils are formed.
3. Methods ofPreservation.
4. Connecting links and Living fossils. The importance of fossils

September 2017

1. Theories of Organic Evolution :Lamarkism, Darwinism, Mutation Theory and the Modern Synthesis Theory;
2. population gene Pool, Gene Frequency

October 2017

1. Variations- gene mutation, chromosomal mutation;
2. Isolation and recombination.
3. Genetic drift, Hardy-Weinberg equilibrium

Name of Faculty: **Dr. A. P. Rajput**

B. Sc. V Sem

Paper – II

June - July 2017

1. Biostatistics :Fundamentals of Biostatistics
2. Preliminary Concepts.

August 2017

1. Frequency distribution
2. Graphical presentation of Data

September 2017

1. Measures of Central Tendency - Mean, Median and Mode
2. Measures of variation

October 2017

1. Probability
2. Chi-Square Test

Month-wise Syllabus Distribution for 2017-18

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. I Sem

June - July 2017

1. Arthropoda: General characters & Classification up to classes with examples.
2. Type study Prawn- Externals characters, Digestive system.
3. Nervous system &Reproductive system of prawn

August 2017

1. Appendages of prawn.
2. Mouth parts of Cockroach,
3. House fly,
4. Butter fly &
5. Mosquito.

September 2017

1. Mollusca:General characters & Classification up to classeswith examples.
2. Type study *Pila globosa* Externals characters

October 2017

1. Digestive system. Respiratory system.
2. Nervous system & Reproductive system.

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. V Sem

Paper – I

June - July 2017

1. Earth as Living -Planet.
2. Sub divisions of ecology, Scope of ecology, Biosphere
3. Abiotic factors- Light, Temperature (Effect on Animals and Plants)
4. Biotic Factor

August 2017

1. Mutualism, Commensalism, Amensialism, Parasitism, Predation, Competition.
2. Habitats- Freshwater habitat — Lotic and Lentic systems

September 2017

1. Zonation of Sea, Marine Biota, Estuarine ecology & Mangrooves
2. Terrestrial habitat
3. A brief account of Biomes.
4. Ecological Adaptations — Freshwater, Marine and Terrestrial

October 2017

1. Biogeochemical Cycles - Principles and concepts of Water,
2. Nitrogen, Carbon,Oxygen cycles

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. V Sem

Paper – II

June - July 2017

1. Sex Determination: Chromosomal mechanism of sex determination
2. Gene balance theory, Gynandomorphs and intersexes.
3. Syndromes in human- Klinefelter and Turners
4. Environmental and hormonal effects on determination of sex

August 2017

1. Sex Linked Inheritance in Drosophila and Man
2. Haemomphilia and colour blindness in Man
3. Sex linkage in poultry.Y - linked genes in man
4. Mutations – Chromosomal aberrations, Molecular basis of gene mutation & types

September 2017

1. Human Genetics :Human Genetic disorders _ Inborn errors of metabolism, Albinism,
2. Phenyl ketonuria, Alkaptonuria, Sickle cell aneamia, Thalassemia, Huntington's Chorea

October 2017

1. Genetic Code and Protein Biosynthesis;
2. Properties of genetic code and
3. Mechanism of biosynthesis, Wooble
4. hypothesis.

Month-wise Syllabus Distribution for 2017-18

Name of Faculty: **Dr. P. A. Deshpande**

B. Sc. 1 Sem

June - July 2017

1. Phylum Annelida- General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.

August 2017

1. *Pheretima posthuma*: Circulatory system and Reproductive system.
2. Phylum Arthropoda- General characters & classification up to classes.
3. Type study - Cockroach: Externals, Digestive and Respiratory system.

September 2017

1. Type study - Cockroach: Nervous system, Reproductive system.
2. Life history of cockroach.

October 2017

1. Mouthparts of cockroach and housefly.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. III Sem

June- July 2017

1. Carbohydrates and Lipids- Definition, Classification
2. Biological Significance of carbohydrates and lipids .

August 2017

1. Enzymes: IUB, Mechanism of enzyme action
2. Specificity of enzymes, reversibility of enzymes action and enzyme inhibitors
3. A brief account of coenzymes & cofactors
4. Clinical importance of enzymes.

September 2017

1. Water soluble vitamins (B – complex and C)
2. Fat soluble vitamins (A, D, E and K)
3. Concepts of bioenergetics- Glycolysis

October 2017

1. Bioenergetics- Kreb's cycle
2. Bioenergetics- Electron Transport System.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. V Sem

Paper – I

June - July 2017

1. Modes of evolution: Micro evolution, Macro evolution and Mega evolution
2. Community Ecology-Community structure, Ecological niches, Edge effect
3. Stratification, Ecotone

August 2017

1. Evolution of Man
2. Evolution Horse

September 2017

1. Paleontology: Mesozoic reptiles with a note on Dinosaurs
2. Population Ecology: Density, natality, mortality.

October 2017

1. Population Ecology: Age distribution, Population growth, types and curves.

Month-wise Syllabus Distribution for 2017-18

Name of Faculty: Prof. P. P. Naik

B. Sc. III Sem

June - July 2017

1. Proteins- Definition, Classification and Biological Significance.
2. Physiology of Digestion- Digestion & absorption of Proteins,Carbohydrates& Fats.

August 2017

1. Physiology of Respiration: Transport of Oxygen and Carbon-di-oxide.
2. Chloride shift. Respiratory Pigments and RQ
3. Circulation: Neurogenic and Myogenic Hearts. Structure. function
4. Regulation of Myogenic heart. Blood pressure and RQ

September 2017

1. Physiology of Excretion - Ammonotelic, Ureotelic & Uricotelic excretion with examples.
2. Physiology of Urine formation in Man. Ornithine cycle.
3. Muscle Contraction-Ultra structure of striated muscle.

October 2017

1. The role of myosin, actin, tropomyosin and tropionin.
2. Mechanism of muscle contraction-Sliding filament theory.
3. Chemical changes during muscle contraction.

Name of Faculty: Prof. P. P. Naik

B. Sc. V Sem

Paper – II

June - July 2017

1. Genetics - Introduction_ Mendel and his contribution, Monohybrid and
2. Dihybrid cross (Laws), Definition of Genetical Terminologies.

August 2017

1. Interaction of Genes:Supplementary Factors; Comb, Pattern in fowls.
2. Dominant Epistasis; Plumage colour in Leghorn and Wyandotte
3. Recessive Epistasis: Coat colour in sweet peas.

September 2017

1. Complimentary Factors – Flower colour in sweet peas
2. Lethal gene – Coat colour in mice.
3. Multiple alleles: ABO blood group and Rh factor in human

October 2017

1. Linkage and Crossing Over - Linkage in Drosophila.
2. Significance of Crossing over.

Month-wise Syllabus Distribution for 2017-18

Name of Faculty: Prof. A. A. Halgekar

B. Sc. I Sem

June - July 2017

1. Protozoa: General characters & Classification up to classeswith examples.
2. General Topics-Locomotion

August 2017

1. Nutrition in Protozoa.
2. Porifera: General characters & Classification up to classes with examples.

September 2017

1. Type study-Sycon-Structure & Life history
2. Porifera - Canal system, spicules, Spongin-fibres and Gemmule

October 2017

1. Coelenterate: General characters & Classification up to classes
2. Polymorphism in coelentrates

Name of Faculty: Prof. A. A. Halgekar

B. Sc. III Sem

June- July 2017

1. Developmental Biology: Types of Eggs, Cleavage patterns
2. Frog development up to Organogenesis and Metamorphosis.

August 2017

1. Chick development up to Gastrula
2. Organogenesis upto Neurulation.

September 2017

1. Extra embryonic membranes in birds & their significance.
2. Placenta types, Structure and Functions in mammals

October 2017

1. Modern trends in Human Reproduction – IVF
2. GIFT
3. Surrogate Mother

Name of Faculty: Prof. A. A. Halgekar

B. Sc. V Sem

Paper – I

June - July 2017

1. Zoogeography: Zoogeographical realms of world
2. A brief account of Wallace's line

August 2017

1. Wildlife Conservation: Wild life conservation methods
2. Wildlife in India,Causes for the depletion of wildlife.

September 2017

1. Wild Life Conservation Techniques', methods and measures
2. Brief Account of; IUCN, WWF,Bombay Natural History Society,
3. Indian Board for Wild Life, Red Data Book.

October 2017

1. Wild Life Act 1972 and its amendments in India,
2. CITES Project Tiger
3. Biosphere Reserve.

Month-wise Syllabus Distribution for 2017-18

Name of the faculty: Prof. A. A. Halgekar

B. Sc. II Semester

December 2017

1) General Characters and Classification of Aves up to orders.
2) Type study – **Pigeon** - Externals

January 2018

1) Type study – **Pigeon:** Digestive System
2) Reproductive system (Male and Female).
3) Respiratory system

February 2018

1) Bird migration
2) Flight adaptations
3) Flightless birds
4) Beak& Foot modification.

March 2018

1) Type study – **Rat:** Circulatory system.
2) Nervous system.
3) Excretory system.

April 2018

1) Rat: Reproductive system

Name of the faculty: Prof. A. A. Halgekar

B. Sc. VI Semester

Paper - II

December 2017 - January 2018

1) Sterilization Techniques
2) Use of hot air oven
3) Chemical sterilization

February 2018

1) Bacteria structure and classification based on shapes
2) Reproduction and growth
3) Morphology, Chemical properties of virus
4) Classification of virus

March 2018

1) DNA and RNA virus
2) Fungi - Structure and classification
3) Reproduction in yeast
4) Fermentation: Types of fermentor and basic functions

April 2018

1) Methods of preservation Production of antibiotics - Enzyme protease, Riboflavin
2) Criteria for the selection of microorganisms
3) Production of antibodies (Penicillin, Streptomycin)
4) Enzyme protease and riboflavin
5) Normal microbial flora of the human body

Month-wise Syllabus Distribution for 2017-18

Name of the faculty: Prof. P. P. Naik

B. Sc. II Semester

December 2017 - January 2018

1)Comparative Anatomy: Origin, development & structure of Heartin Fishes, Amphibians, Reptiles,Avesand Mammals.

February 2018

1) Comparative Anatomy: Origin, development & structure of Brain in Fishes, Amphibians, Reptiles,Avesand Mammals.

March 2018

1)Comparative Anatomy: Origin, development & structure of Integument in Fishes, Amphibians, Reptiles,Avesand Mammals.

April 2018

1) Revision of syllabus

Name of the faculty: Prof. P. P. Naik

B. Sc. IV Semester

December 2017 - January 2018

1) Cell Biology – Ultra structure of animal cell. Cell theory and cell cycle.
2) Ultra structure and function of cell organelles:
   a) Plasma membrane
   b) Endoplasmic reticulum.
   c) Lysosomes

February 2018

1) Ultra structure and function of cell organelles:
   a) Ribosomes
   b) Golgi complex
   c) Mitochondria
d) Nucleus

March 2018

1)Chromosomes – Ultra structure of chromosomes.
2) Types of chromosomes.
3) A brief account of Histochemical techniques.
4) Stains – Cytoplasmic and Nuclear stains.

April 2018

1) Preparation of histochemical slides.
2) Revision of portion.

Name of the faculty: **Prof. P. P. Naik**

B. Sc. VI Semester

Paper - I

December 2017 - January 2018

1)Poultry: Scope of poultry, breeds of poultry.
2) Diseases of poultry.

February 2018

1)Poultry maintenance & byproducts.
2) Vermiculture: Earthworm species used in vermiculture.
3) Vermiculture technique.
4) Importance of vermiculture.

March 2018

1)Insect Pest Management: Natural control.
2)Applied control - Mechanical, Physical, Cultural, Legal, Chemical control.

April 2018

1) Revision of portion.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. A. A. Halgekar

B. Sc. I Sem

June - July 2018

1. Protozoa: General characters & Classification up to classes with examples.
2. General Topics-Locomotion and Nutrition in Protozoa

August 2018

1. Porifera: General characters & Classification up to classes with examples.
2. Type study-Sycon-Structure & Life history.

September 2018

1. Porifera: Canal system, Spicules, Spongin-fibres and Gemmule
2. Coelenterate:General characters & Classification up to classes with examples.

October 2018

1. Structure &life history of Obelia. Polymorphism

Name of Faculty: Prof. A. A. Halgekar

B. Sc. V Sem

Paper – I

June - July 2018

1. Zoogeography: Zoogeographical realms of world.
2. A brief account of Wallace's line

August 2018

1. Wildlife Conservation :Wild lifer conservation methods
2. Wildlife in India,Causes for the depletion of wildlife.

September 2018

1. Wild Life Conservation Techniques', methods and measures
2. Brief account of : IUCN, WWF, Bombay Natural History Society,
3. Indian Board for Wild Life, Red Data Book.

October 2018

1. Wild Life Act 1972 and its amendments in India,CITES.
2. Project Tiger and Biosphere Reserve.

Month-wise Syllabus Distribution for 2017-18

Name of the faculty: Dr. P. A. Deshpande

B. Sc. II Sem

December 2017 – January 2018

1)Mammalia: General characters & classification up to orders withExamples.
2) Type study Rat: Externals characters, DigestiveSystem.

February 2018

1)Amphibia: General characters & classification up to orders withExamples.
2) Type study Frog- Externals characters,Digestive system, Circulatory & Reproductive system.
3) Axolotl larva & its significance.

March 2018

1)Reptilia: General characters & classification up to orders withExamples.
2)Type study Calotes: Externals characters,Digestive system, Circulatory & Reproductive system.

April 2018

1) Indian poisonous & non-poisonous snakes.

Name of the faculty: Dr. P. A. Deshpande

B. Sc. IVSem

December 2017 - January 2018

Study of histological structure and functions of the following Mammalian organsections.

1) Tongue
2) Salivary glands
3) Stomach
4) Intestine

February 2018

Study of histological structure and functions of the following Mammalian organsections.

1) Liver
2) Pancreas
3) Kidney

March 2018

Study of histological structure and functions of the following Mammalian organsections.

1) Adrenal
2) Pituitary
3) Ovary

April 2018

Study of histological structure and functions of the following Mammalian organsections.

1) Testis
2) Thyroid

Name of the faculty: **Dr. P. A. Deshpande**

B. Sc. VI Sem

Paper - I

December 2017 –January 2018

1) Animal Husbandry: Maintenance and Breeds of Sheeps.
2) Animal Husbandry: Maintenance and Breeds of Goats.
3) Animal Husbandry: Maintenance and Breeds of cows.

February 2018

1)Animal Husbandry: Maintenance and Breeds of buffaloes.
2)Animal Husbandry: Diseases,Products and Byproducts of the sheeps and goats.
3) Animal Husbandry: Diseases,Products and Byproducts of the cows and buffaloes.

March 2018

1)Composition and Nutritive value of Milk.
2)Lac culture: Classification of Lac Insect (*Tachardia lacca*), life history of Lac insect.
3) Host plants. Cultivation of Lac.

April 2018

1)Composition and properties of Lac& Economic Importance.

Name of the faculty: **Dr. P. A. Deshpande**

B. Sc. VI Sem

Paper - II

December 2017 – January 2018

1. Introduction: History,Name of Tools and Techniques in Nanotechnology.
2. Nanobiology: Applications of Nano in biology.
3. Nanomedicines: Nano drug Administration,Diagnostics and TherapeuticApplications.

February 2018

1.Nucleic Acid Blotting and their applications - Southern Blotting, NorthernBlotting, Western Blotting.
2. Biophysical Methods – Brief note of NMR, ESR Spectroscope and their uses.

March 2018

1.Radioisotopes Techniques - Autoradiograph.
2. Types of radioactive decay- Alpha,Beta emission& Gamma rays.
3. Geiger-Mullar Counter, Liquid Scintillator.
4. Biological applications of Radioisotopes.

April 2018

1.A brief note on the use of ECG, PET, MRI, CAT.
2. Study Neuron recorder inElectro Physiological methods.

Month-wise Syllabus Distribution for 2017-18

Name of the Faculty: Dr. A. P.Rajput

B. Sc. IV Semester

December 2017 - January 2018

1)Social behaviour: Types of Animal society,Colony in Honey bees, Monkey troops.
2) Parental care– Concepts, Fishes, Amphibians and Birds.

February 2018

1) Animal Communication-Chemical, Visual & Audio.Functions of signals,Odours,sounds & light.
2) Dominance and Courtship behaviour.

March 2018

1) Innate behavior: Taxes, Reflexes, Instincts, motivation.
2) Learned behavior: Habituation, Imprinting, Condition reflexes, Insight learning.
3) Biological clock, Circadian Rhythm

April 2018

1) Application of Ethological techniques (Ethogram) to human behavior.

Name of the Faculty: Dr. A. P. Rajput

B. Sc. VI Semester

Paper - I

December 2017 - January 2018

1) Apiculture: Species of honey bees, their Social organization of honey bees.
2) Apiculture:Life history, methods of bee keeping.
3) Products of bees and their economic importance.

February 2018

1)Sericulture:Mulberry Silkworm and Life History of *Bombyx mori*.
2) Rearing of Silkworm: Grainage management, Emergence of moth andfertilization, egg laying, hatching and moulting of-silkworm.
3)Spinning ofcocoons. Cocoon processing, stiffling and spinning silk. Filature.

March 2018

1) Study of non-mulberry silkworms in brief.
2) Silkworm diseases: Muscardine, Grasserie, Flacherie & Pebrine.

Name of the Faculty: Dr. A. P. Rajput

B. Sc. VI Semester

Paper - II

December 2017 - January 2018

1) Microscopy
2)Bioinformatics: Definition. Goals of Bioinformatics.
3) Sequencing – Sequence analysisand Structure analysis.
4) Applications of Bioinformatics.
5) Classification of Biological Data Bases. Characteristic of FASTA and BLAST.

February 2018

1)Aims and goals of Human Genome Project: Main findings ofhuman genome Project., Prediction and tools for gene prediction.Comparative genomics.
2) Role of microbes in environment
3)Microscopy: Compound Microscope and its functions. Dark field microscope. Fluorescent Microscope. Phase Contrast Microscope and Electron Microscope and their uses

March 2018

1)Genetic Engineering in animals: Transgenic Mouse, Transgenicsheep, Genetically altered Fish, Mosquito and Drosophila.
2)Gene therapy in Humans
3) Histochemical and Immunization Techniques: ELISA, RIA. FlowCytometry.
4)Proteomics: Two dimensional Gel Electrophoresis, Mass spectrometry, SDS-PAGE.
5) Structure of protein: Primary, Secondary, Tertiary andQuaternary.

April 2018

1) Techniques of Cell fraction and Centrifugation: Homogenization and cell tissue Disruption, Centrifugation, Ultra centrifugation.
2) DNA Sequencing, *In situ* Hybridization, DNA microchips.

Month-wise Syllabus Distribution for 2017-18

Name of the faculty: Prof. M. S. Goundadkar

B. Sc. II Semester

December 2017 - January 2018

1) Chordates: General characters and classification
2) Sub-phylum: Hemichordata-External Characters& Digestive system of Balanoglossus.
3) Sub-phylum: Urochordata- External Characters& Retrogressive metamorphosis in Herdmania.

February 2018

1) Subphylum: Cephalochordata –External Characters& feeding mechanism in Branchiostoma
2) Cyclostomata: External Characters &generalorganisation of Petromyzon & Myxine (Hagfish/Slime).

March 2018

1) Pisces: General characters & Classification of Pisces up to orderswith examples.
2) General characters of Chondrichthyes
3) General characters of Osteichthyes

April 2018

1) Type study Scoliodon-Externals Characters,Digestive system, Reproductive System
2) Fish migration.

Name of the faculty: Prof. M. S. Goundadkar

B. Sc. IV Semester

December 2017 - January 2018

1)Cell division Types: Mitosis

February 2018

1)Cell division Types: Meiosis
2) Concept of Aging theories:Intracellular changes, free radicals
3) Somatic nutrition, immunological
4) Clonalselection and errors in DNA and RNA functions.

March 2018

1)Concept of Aging theories: Extracellular changes
2) Cell Death: Apoptosis, Necrosis, definition and significance
3) Cancer Cell: Characteristics - Theories /Hypothesis regarding causes of cancer.
4) Extrinsic factors, Physical , Chemical and Biological.

April 2018

1) Intrinsic factors, somatic mutations and oncogenes .
2) Aging related phenomenon.

Name of the faculty: **Prof. M. S. Goundadkar**

B. Sc. VI Semester

Paper - I

December 2017 - January 2018

1) Aquaculture: Prawn Fisheries. Species of Prawns
2) Culture of freshwater Prawns
3) Culture of marinePrawns

February 2018

1)Preservation and processing of Prawns.
2) Pearl Culture: Pearl producing molluscans. Pearl formation
3) Pearlproducing sites in India.

March 2018

1)Quality and composition of Pearl.
2) Pearl Industry:Artificial Insertion of nucleus
3) Brief technique of Fish culture

April 2018

1)Preservation of fishes and their by-products
2) Poultry:Composition and Nutritive value of Egg

Name of the faculty: Prof. M. S. Goundadkar

B. Sc. VI Semester

Paper - II

December 2017 - January 2018

1) Techniques of Cell fraction and Centrifugation.
2) Homogenization and cell tissue disruption Centrifugation

February 2018

1) Ultra-centrifugation.
2) DNA Sequencing, *Insitu* Hybridization, DNA microchips

March 2018

1) Genetic Engineering in animals- Transgenic Mouse, Transgenic sheep

April 2018

1) Genetically Altered Fish, Mosquito and Drosophila.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. P. P. Naik

B. Sc. III Sem

June- July 2016

1. Proteins:Definition, Classification and Biological Significance.
2. Physiology of Digestion. Digestion of Proteins, carbohydrates and fats.

August 2016

1. Absorption of food. Regulation and role of digestive system enzymes. Balanced diet.
2. Physiology of Respiration: Transport of Oxygen and Carbon-di-oxide.
3. Chloride shift, Respiratory Pigments and RQ.

September 2016

1. Circulation: Neurogenic and Myogenic Hearts.
2. Structure, function & regulation of Myogenic heart. Blood pressure.
3. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.
4. Physiology of Urine formation in Man. Ornithine cycle.

October 2016

1. Muscle Contraction:Ultra structure of striated muscle.
2. The role of myosin, actin, tropomyosin and troponin.
3. Mechanism of muscle contraction - Sliding filament theory.
4. Chemical changes during muscle contraction. Structure and function of neuromuscularjunction.

Name of Faculty: Prof. P. P. Naik

B. Sc. V Sem

Paper – II

June2016

1. Genetics – Introduction. Definition of genetical terminologies (Genotype, phenotype,alleles).

July 2016

1. Mendel and his contribution.
2. Monohybrid and Dihybrid cross (laws).

August 2016

1. Interaction of genes: Supplementary factors – Comb pattern in fowls.
2. Dominant Epistasis: Plumage colour in Leghorn and Wyandotte.
3. Recessive Epistasis: Coat colour in sweet peas.

September 2016

1. Complimentary Factors – Flower colour in sweet peas.
2. Lethal genes – Coat colour in mice.
3. Multiple alleles: ABO blood group and Rh factor in human.

October 2016

1. Linkage and Crossing over - Linkage in Drosophila.
2. Significance of Crossing over.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. A. A. Halgekar

B. Sc. I Sem

June - July 2018

1. Protozoa: General characters & Classification up to classes with examples.
2. General Topics-Locomotion and Nutrition in Protozoa

August 2018

1. Porifera: General characters & Classification up to classes with examples.
2. Type study-Sycon-Structure & Life history.

September 2018

1. Porifera: Canal system, Spicules, Spongin-fibres and Gemmule
2. Coelenterate:General characters & Classification up to classes with examples.

October 2018

1. Structure &life history of Obelia. Polymorphism

Name of Faculty: Prof. A. A. Halgekar

B. Sc. V Sem

Paper – I

June - July 2018

1. Zoogeography: Zoogeographical realms of world.
2. A brief account of Wallace's line.

August 2018

1. Wildlife Conservation: Wild life conservation methods.
2. Wildlife in India, Causes for the depletion of wildlife.

September 2018

1. Wild Life Conservation Techniques', methods and measures.
2. Brief account of IUCN, WWF, Bombay Natural History Society.
3. Indian Board for Wild Life, Red Data Book.

October 2018

1. Wild Life Act 1972 and its amendments in India, CITES.
2. Project Tiger and Biosphere Reserve.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: **Dr. P. A. Deshpande**

B. Sc. I Sem

June - July 2018

1. Phylum Annelida: General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.

August 2018

1. *Pheretima posthuma*: Circulatory system, Nervous system.
2. *Pheretima posthuma*: Reproductive system.
3. Parasitology – *Plasmodium vivax*

September 2018

1. Parasitology – *Entamoeba histolytica*
2. Parasitology – *Taenia solium*
3. Parasitology – Ascaris

October 2018

1. Parasitology – *Wuchereria bancrofti*
2. Ectoparasites – Ticks and mites.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. III Sem

June - July 2018

1. Carbohydrates: Definition, Classification and Biological Significance.
2. Lipids: Definition, Classification and Biological Significance.
3. Enzymes: Definition, classification of enzymes.
4. Mechanism of enzyme action

August 2018

1. Specificity of enzymes, reversibility of enzymes.
2. Enzyme inhibitors
3. Brief account of coenzymes and cofactors

September 2018

1. Clinical importance of enzymes
2. Water soluble vitamins
3. Fat soluble vitamins

October 2018

1. Concepts of bioenergetics: Glycolysis
2. Krebs cycle, Electron Transport system

Name of Faculty: Dr. P. A. Deshpande

B. Sc. V Sem

Paper – I

June - July 2018

1. Modes of evolution: Micro evolution, Macro evolution and Mega evolution
2. Biogeochemical cycles: Water cycle, Carbon cycle

August 2018

1. Biogeochemical cycles: Nitrogen cycle, Oxygen cycle
2. Evolution of Man

September 2018

1. Evolution of Man
2. Evolution of horse
3. Palaeontology: Mesozoic reptiles.

October 2018

1. Palaeontology: Mesozoic reptiles, with a note on Dinosaurs.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. V Sem

Paper – II

June - July 2018

1. Biotechnology- Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Types of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.
3. Molecular biotechnology: Genetic engineering.

August 2016

1. Molecular biotechnology: Isolation of DNA, Gene cloning, Vectors, Restriction enzymes,
2. Polymerase Chain Reaction (PCR), DNA fingerprinting.

September 2016

1. Agricultural applications of biotechnology - Improvements in crop yield.
2. Industrial applications of biotechnology: Ethanol production, Food processing, Food fermentors& industrial enzymes.
3. Environmental applications- Cleaning up environmental pollutants and bioremediation.

October 2016

1. Medical applications of biotechnology: Gene testing, Gene therapy, Drug discovery.
2. Diagnosis of inherited disorders, Personal identification.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Dr. A. P. Rajput

B. Sc. I Sem

June - July 2018

1. Taxonomy: Binomial nomenclature and concept of Species.
2. Platyhelminthes:General characters & Classification up to classeswith examples.

August 2018

1. Platyhelminthes: Type Study-Fasciola hepatica Externals character,
2. Reproductive system & Lifehistory. Parasitic adaptation in Platyhelminthes.

September 2018

1. Aschelminthes: General characters & classification up to classes with examples
2. Parasitic adaptations in Aschelminthes.

October 2018

1. Echinodermata: General characters & classification up to classes with examples.
2. Type study-Starfish-External characters,Digestive system,
3. Water vascular system, andEchinoderm larvae.

Name of Faculty: **Dr. A. P. Rajput**

B. Sc. III Sem

June - July 2018

1. Brief account of Gametogenesis and Fertilization.
2. Physiology of Nervous Coordination: Structure and propagationof nerve impulse in medullated and non medullated Nerve.

August 2018

1. Physiology of Nervous Coordination: Synaptic transmission and Neuro-muscular Junction. Neuro-transmitters and their importance.
2. Structure & organs related to Vision, Olfaction &Audition inHuman being.

September 2018

1. Immunology: Bone marrow, thymus, spleen Payer's patches.T and B cells .Types and Significance.
2. Antigensand Antibodies.

October 2018

1. Structure of Immunoglobins G (IgG) & Immunization

Name of Faculty: Dr. A. P. Rajput

B. Sc. V Sem

Paper – I

June - July 2018

1. Evolution. The Solar SystemOrigin of Earth , Origin of Life and its theories

August 2018

1. The geological time scale
2. Fossils: Definition and Kinds of fossils, How fossils are formed, Methods ofPreservation.
3. Connecting links and Living fossils. The importance of fossils

September 2018

1. Theories of Organic Evolution : Lamarkism, Darwinism, Mutation Theory and the Modern Synthesis Theory:
2. Population gene Pool, Gene Frequency

October 2018

1. Variations — gene mutation, chromosomal mutation.
2. Isolation and recombination. Genetic drift, Hardy-Weinberg equilibrium

Name of Faculty: **Dr. A. P. Rajput**

B. Sc. V Sem

Paper – II

June - July 2018

1. Biostatistics: Fundamentals of Biostatistics
2. Preliminary Concepts.

August 2018

1. Frequency distribution
2. Graphical presentation of Data

September 2018

1. Measures of Central Tendency - Mean, Median and Mode
2. Measures of variation

October 2018

1. Probability, Chi-Square Test

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. I Sem

June - July 2018

1. Arthropoda:General characters & Classification up to classes with examples.
2. Type study Prawn- Externals characters, Digestive system.

August 2018

1. Type study prawn: Nervous system & Reproductivesystem. Appendages of prawn.
2. Mouth parts of Cockroach,House fly, Butter fly & Mosquito.

September 2018

1. Mollusca:General characters & Classification up to classeswith examples.
2. Type study *Pila globosa* External characters.

October 2018

1. Digestive system. Respiratory system.
2. Nervous system & Reproductive system.

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. III Sem

June - July 2018

1. Types of Eggs, Cleavage patterns
2. Development of Frog up to Gastrulation. Organizer phenomenon.

August 2018

1. Chick development up to 48 hours chick embryo.
2. Placenta types Structure and Functions.

September 2018

1. Extra embryonicmembranes in mammals.
2. Human Development up to Implantation.

October 2018

1. Physiology of Respiration:Transport of Oxygen & Carbondioxide.
2. Chloride shift, Respiratory Pigments.

Name of Faculty: **Prof. M. S. Goundadkar**

B. Sc. V Sem

Paper I

June - July 2018

1. Earth as Living.-Planet. Sub divisions of ecology, Scope of ecology, Biosphere
2. Abiotic factors- Light, Temperature (Effect on Animals and Plants)
3. Biotic Factor

August 2018

1. Mutualism, Commensalism, Amensialism, Parasitism, Predation, Competition, Parasitism.
2. Habitats - Freshwater habitat.
3. Lotic and Lentic systems

September 2018

1. Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves
2. Terrestrial habitat — A brief account of Biomes.
3. EcologicalAdaptations — Freshwater, Marine and Terrestrial.

October 2018

1. Community Ecology-Community structure. Ecological niches.
2. Edge effect. Stratification, Ecoton.
3. Population Ecology: Density, natality, mortality.
4. Age distributionPopulation growth, types and curves.

Name of **Faculty: Prof. M. S. Goundadkar**

B. Sc. V Sem

Paper II

June - July 2018

1. Sex Determination: Chromosomal mechanism of sex determination
2. Genic balance theory, Gynandomorphs, and intersexes
3. Syndromes in human- Klinefelter and Turners

August 2018

1. Environmental and hormonal effects on determination of sex
2. Sex Linked Inheritance in Drosophila and Man, Hemophilia and colour blindness in Man, Sex linkage in poultry.
3. Y - linked genes in man

September 2018

1. Mutations – Chromosomal aberrations, Molecular basis of gene mutation & types
2. Human Genetics:Human Genetic disorders
3. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell aneamia, Thalassemia, Huntington'sChorea

October 2018

1. Genetic Code and Protein Biosynthesis:
2. Properties of generic code andMechanism of biosynthesis
3. Wooble hypothesis

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. A. A. Halgekar

B. Sc. II Semester

December 2018 - January 2019

1. General Characters and Classification of Aves up to orders.
2. Type study – Pigeon - Externals
3. Type study – Pigeon: Digestive System
4. Reproductive system (Male and Female)
5. Respiratory system

February 2019

1. Bird migration
2. Flight adaptations
3. Flightless birds
4. Beak& Foot modification.

March 2019

1. Type study – Rat: Circulatory system
2. Nervous system.
3. Excretory system.

April 2019

1. Rat: Reproductive system

Name of Faculty: Prof. A. A. Halgekar

B.Sc. VI Semester

Paper - II

December 2018 - January 2019

1. Sterilization Techniques
2. Use of hot air oven
3. Chemical sterilization

February 2019

1. Bacteria structure and classification based on shapes
2. Reproduction and growth
3. Morphology, Chemical properties of virus
4. Classification of virus

March 2019

1. DNA and RNA virus
2. Fungi – Structure and classification
3. Reproduction in yeast
4. Fermentation: Types of fermentor and basic functions

April 2019

1. Methods of preservation Production of antibiotics - Enzyme protease, Riboflavin
2. Criteria for the selection of microorganisms, Production of antibodies (Penicillin, Streptomycin
3. Enzyme protease and riboflavin
4. Normal microbial flora of the human body

Month-wise Syllabus Distribution for 2018-19

Name of faculty: Prof. P. P. Naik

B. Sc. IV Semester

December 2018 - January 2019

1. Cell Biology – Ultra structure of animal cell, Cell theory and cell cycle.
2. Ultra structure and function of cell organelles:
   a) Plasma membrane
   b) Endoplasmic reticulum
   c) Lysosomes

February 2019

1. Ultra structure and function of cell organelles:
   a) Ribosomes
   b) Golgi complex
   c) Mitochondria
   d) Nucleus

March 2019

1. Chromosomes – Ultra structure of chromosomes.
2. Types of chromosomes.

April 2019

1. Cell division Types- mitosis & meiosis.

Name of faculty: Prof. P. P. Naik

B. Sc. VI Semester

Paper - I

December 2018 - January 2019

1. Poultry: Scope of poultry, breeds of poultry.
2. Diseases of poultry.

February 2019

1. Poultry maintenance & byproducts.
2. Vermiculture: Earthworm species used in vermiculture.
3. Vermiculture technique.
4. Importance of vermiculture.

March 2019

1. Insect Pest Management: Natural control.
2. Applied control - Mechanical, Physical, Cultural, Legal, Chemical control.

April 2019

1. Revision of portion.

Month-wise Syllabus Distribution for 2018-19

Name of faculty: Dr. P. A. Deshpande

B. Sc. II Sem

December 2018 - January2019

1. Mammalia: General characters & classification up to order with Examples.

February 2019

1. Amphibia: General characters & classification up to orders with Examples.
2. Type study Frog- Externals characters, Digestive system, Circulatory & Reproductive system.
3. Axolotl larva & its significance.

March 2019

1. Reptilia: General characters & classification up to orders with Examples.
2. Type study Calotes: Externals characters, Digestive system, Circulatory & Reproductive system.

April 2019

1. Indian poisonous & non-poisonous snakes.

Name of faculty: Dr. P. A. Deshpande

B. Sc. IV Sem

December 2018 - January 2019

Study of histological structure and functions of the following Mammalian organ sections.

1. Stomach
2. Intestine

February 2019

Study of histological structure and functions of the following Mammalian organ sections.

1. Liver
2. Pancreas
3. Kidney

March 2019

Study of histological structure and functions of the following Mammalian organ sections.

1. Adrenal
2. Pituitary
3. Ovary

April 2019

Study of histological structure and functions of the following Mammalian organ sections.

1. Testis
2. Thyroid
3. Parathyroid
4. Thymus

Name of faculty: Dr. P. A. Deshpande

B. Sc. VI Sem

Paper - I

December 2018 – January 2019

1. Animal Husbandry: Maintenance and Breeds of Sheeps.
2. Animal Husbandry: Maintenance and Breeds of Goats.
3. Animal Husbandry: Maintenance and Breeds of cows.

February 2019

1. Animal Husbandry: Maintenance and Breeds of buffaloes.
2. Animal Husbandry: Diseases, Products and Byproducts of the sheeps and goats.
3. Animal Husbandry: Diseases, Products and Byproducts of the cows and buffaloes.

March 2019

1. Composition and Nutritive value of Milk.
2. Lac culture: Classification of Lac insect (*Tachardia lacca*), Life history of Lac insect.
3. Host plants Cultivation of Lac.

April 2019

1. Composition and properties of Lac& Economic importance.

Name of faculty: Dr. P. A. Deshpande

B. Sc. VI Sem

Paper - II

December 2018 - January2019

1. Introduction: History,Name of Tools and Techniques in Nanotechnology
2. Nanobiology: Applications of Nano in biology.
3. Nanomedicines: Nano drug Administration, Diagnostics and Therapeutic Applications.

February 2019

1. Nucleic Acid Blotting and their applications - Southern Blotting, Northern Blotting, Western Blotting.
2. Biophysical Methods – Brief note of NMR, ESR Spectroscope and their uses.

March 2019

1. Radioisotopes Techniques – Autoradiograph.
2. Types of radioactive decay- Alpha, Beta emission& Gamma rays.
3. Geigar-Mullar Counter, Liquid Scintillator.
4. Biological applications of Radioisotopes.

April 2019

1. A brief note on the use of ECG, PET, MRI, CAT.
2. Single Neuron recorder in Electro Physiological methods.

Month-wise Syllabus Distribution for 2018-19

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. II Semester

December 2018- January 2019

1. Chordates: General characters and classification
2. Sub-phylum: Hemichordata - External Characters & Digestive system of Balanoglossus.
3. Sub-phylum: Urochordata- External Characters& Retrogressive metamorphosis in Herdmania.

February 2019

1. Subphylum: Cephalochordata –External Characters & feeding mechanism in Branchiostoma
2. Cyclostomata: External Characters &general organisation of Petromyzon & Myxine (Hagfish/Slime).

March 2019

1. Pisces: General characters & Classification of Pisces up to orders with examples.
2. General characters of Chondrichthyes
3. General characters of Osteichthyes

April 2019

1. Type study Scoliodon -Externals Characters, Digestive system, Reproductive System.
2. Fish migration.

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. IV Semester

December 2018 - January 2019

1. Cellular Aging & Cell Death:
2. Concept of Aging theories.
3. Effect ofAging on Cell organelles.
4. Apoptosis, Necrosis-Definition & significance.

February 2019

1. Cancer Biology: Introduction.
2. Characteristics of cancer cells.
3. Carcinogens, cause & prevention
4. Histochemical Techniques: Cytoplasmic & Nuclear stains.

March 2019

1. Preparation of histological slides.
2. Study of histological structure and functions of the following Mammalian organs. A. Tongue B. Salivary glands

April 2019

1. Ethology: Introduction Definition, Scope of ethology.
2. Brief Contributions of Konard Lorenz, NikoTinbergen and Karl Von Frisch

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. VI Semester

Paper - I

December 2018 - January 2019

1. Aquaculture: Prawn Fisheries, Species of Prawns
2. Culture of freshwater Prawns
3. Culture of marine Prawns

February 2019

1. Preservation and processing of Prawns.
2. Pearl Culture: Pearl producing molluscans, Pearl formation
3. Pearl producing sites in India.

March 2019

1. Quality and composition of Pearl.
2. Pearl Industry: Artificial Insertion of nucleus
3. Brief technique of Fish culture

April 2019

1. Preservation of fishes and their by-products
2. Poultry:Breeds of fowl, Diseases of poultry.

Name of Faculty: Prof. M. S. Goundadkar

B. Sc. VI Semester

Paper - II

December 2018 - January 2019

1. Microbiology- Role of microbes in environment
2. Methods in Biology- Techniques of Cell fraction and Centrifugation.

February 2019

1. Homogenization and cell tissue disruption
2. Centrifugation, Ultra centrifugation
3. DNA Sequencing, *In situ* Hybridization,
4. DNA microchips

March 2019

1. Genetic Engineering in animals- Transgenic Mouse, Transgenic sheep,
2. Genetically Altered Fish, Mosquito and Drosophila,
3. Gene therapy in Humans

April 2019

1. Histochemical and Immunization Techniques- ELISA,
2. RIA, FlowCytometry

Month-wise Syllabus Distribution for 2018-19

Name of the Faculty: Dr. B. B. Goundadkar

B. Sc. II Semester

December 2018 - January 2019

1. Comparative anatomy - Origin, development & structure of Heart in Fishes.
2. Amphibians
3. Reptiles
4. Aves and mammals

February 2019

1. Comparative anatomy - Origin, development & structure of Brain in Fishes.
2. Amphibians,
3. Reptiles
4. Aves and mammals

March 2019

1. Comparative anatomy - Origin, development & structure of integument in Fishes,
2. Amphibians
3. Reptiles

April 2019

1. Comparative anatomy - Origin, development & structure of Integument inAves and mammals

Name of the Faculty: Dr. B. B. Goundadkar

B. Sc. IV Semester

December 2018 - January 2019

1. Social behaviour: Types of Animal society, Colony in Honey bees, Monkey troops.
2. Parental care- Concepts, Fishes, Amphibians and Birds.

February 2019

1. Animal Communication-Chemical, Visual & Audio. Functions of signals, Odours, sounds & light.
2. Territoriality and Courtship behaviour.

March 2019

1. Innate behavior: Taxes, Reflexes, Instincts, motivation.
2. Learned behavior: Habituation

April 2019

1. Imprinting, Condition reflexes, Insight learning.
2. Biological clock, Circadian Rhythm

Name of the Faculty: Dr. B. B. Goundadkar

B. Sc. VI Semester

Paper - I

December 2018 - January 2019

1. Apiculture: Species of honey bees, their Social organization of honey bees.
2. Apiculture:Life history, methods of bee keeping.
3. Products of bees and their economic importance.

February 2019

1. Sericulture:Mulberry Silkworm and Life History of *Bombyx mori*.
2. Rearing of Silkworm: Grainage management, Emergence of moth andfertilization, egg laying, hatching and moulting of-silkworm.

March 2019

1. Spinning of cocoons, Cocoon processing, stiffling and spinning silk. Filature.
2. Study of non-mulberry silkworms in brief.

April 2019

1. Silkworm diseases: Muscardine, Grasserie, Flacherie & Pebrine

Name of the Faculty: Dr. B. B. Goundadkar

B. Sc. VI Semester

Paper - II

December 2018 - January 2019

1. Bioinformatics: Definition, Goals of Bioinformatics.
2. Sequencing – Sequence analysis and Structure analysis.
3. Applications of Bioinformatics.
4. Classification of Biological Data Bases. Characteristic of FASTA and BLAST.

February 2019

1. Aims and goals of Human Genome Project: Main findings of human genome Project.Prediction and tools for gene prediction. Comparative genomics.
2. Microscopy- Compound Microscope and its functions. Dark field microscope.

March 2019

1. Fluorescent Microscope, Phase Contrast Microscope and Electron Microscope andtheir uses
2. Proteomics: Two dimensional Gel Electrophoresis, Mass spectrometry, SDS-PAGE.

April 2019

1. Structure of protein: Primary, Secondary, Tertiary and Quaternary.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2018 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Protozoa: General characters & Classification up to classes with examples.
2. General Topics-Locomotion and Nutrition in Protozoa.

Name of Faculty: Dr. P. A. Deshpande

1. Phylum Annelida- General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.

Name of Faculty: Dr. A. P. Rajput

1. Taxonomy: Binomial nomenclature and concept of Species.
2. Platyhelminthes: General characters & Classification up to classes with examples.

Name of Faculty: Prof. M. S. Goundadkar

1. Arthropoda: General characters & Classification up to classes with examples.
2. Type study Prawn- Externals characters, Digestive system.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2018 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Proteins: Definition, Clacsification and Biological Significance.
2. Physiology of Digestion: Digestion of Proteins, carbohydrates and fats.

Name of Faculty: Dr. P. A. Deshpande

1. Carbohydrates: Definition, Classification and Biological Significance.
2. Lipids: Definition, Classification and Biological Significance.
3. Enzymes: Definition, classification of enzymes.
4. Mechanism of enzyme action.

Name of Faculty: Dr. A. P. Rajput

1. Brief accuunt of Gametogenesis and Fertilization.
2. Physiology of Nervous Coordination: Structure and propagation of nerve impulse in medullated and non medullated Nerve.

Name of Faculty: Prof. M. S. Goundadkar

1. Types of Eggs, Cleavage patterns
2. Development of Frog up to Gastrulation.
3. Organizer phenomenon.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2018 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Zoogeography: Zoogeographical realms of world.
2. A brief account of Wallace's line.

Name of Faculty: Dr. P. A. Deshpande

1. Modes of evolution: Micro evolution, Macro evolution and Mega evolution.
2. Biogeochemical cycles: Water cycle, Carbon cycle.

Name of Faculty: Dr. A. P. Rajput

1. Evolution. The Solar System, Origin of Earth , Origin of life and its theories.

Name of Faculty: Prof. M. S. Goundadkar

1. Earth as Living Planet. Sub divisions of ecology, Scope of ecology, Biosphere.
2. Abiotic factors- Light, Temperature (Effect on Animals and Plants).
3. Biotic Factor.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in August 2018 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Porifera: General characters & Classification up to classes with examples.
2. Type study-Sycon-Structure & Life history.

Name of Faculty: Dr. P. A. Deshpande

1. *Pheretima posthuma*: Circulatory system, Nervous system.
2. *Pheretima posthuma*: Reproductive system.
3. Parasitology – *Plasmodium vivax*.

Name of Faculty: Dr. A. P. Rajput

1. Platyhelminthes: Type Study-Fasciola hepatica Externals character.
2. Reproductive system & Life history. Parasitic adaptation in Platyhelminthes.

Name of Faculty: Prof. M. S. Goundadkar

1. Type study prawn: Nervous system & Reproductive system. Appendages of prawn.
2. Mouth parts of Cockroach, House fly, Butter fly & Mosquito.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in August 2018 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Absorption of food. Regulation and role of digestive system enzymes. Balanced diet.
2. Physiology of Respiration: Transport of Oxygen and Carbon-di-oxide.
3. Chloride shift, Respiratory Pigments and RQ.

Name of Faculty: Dr. P. A. Deshpande

1. Specificity of enzymes, reversibility of enzymes.
2. Enzyme inhibitors.
3. Brief account of coenzymes and cofactors.

Name of Faculty: Dr. A. P. Rajput

1. Physiology of Nervous Coordination: Synaptic transmission and Neuro-muscular Junction. Neuro-transmitters and their importance.
2. Structure & organs related to Vision, Olfaction &Audition in Human being.

Name of Faculty: Prof. M. S. Goundadkar

1. Chick development up to 48 hours chick embryo.
2. Placenta types Structure and Functions.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in August 2018 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wildlife Conservation: Wild life conservation methods.
2. Wildlife in India, Causes for the depletion of wildlife.

Name of Faculty: Dr. P. A. Deshpande

1. Biogeochemical cycles: Nitrogen cycle, Oxygen cycle.
2. Evolution of Man.

Name of Faculty: Dr. A. P. Rajput

1. The geological time scale.
2. Fossils: Definition and Kinds of fossils, How fossils are formed, Methods of Preservation.
3. Connecting links and Living fossils. The importance of fossils.

Name of Faculty: Prof. M. S. Goundadkar

1. Mutualism, Commensalism, Amensialism, Parasitism, Predation, Competition, Parasitism.
2. Habitats - Freshwater habitat.
3. Lotic and Lentic systems.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in August 2018 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Interaction of genes: Supplementary factors – Comb pattern in fowls.
2. Dominant Epistasis; Plumage colour in Leghorn and Wyandotte.
3. Recessive Epistasis: Coat colour in sweet peas.

Name of Faculty: Dr. P. A. Deshpande

1. Molecular biotechnology: Isolation of DNA, Gene cloning, Vectors, Restriction enzymes.
2. Polymerase Chain Reaction (PCR), DNA fingerprinting.

Name of Faculty: Dr. A. P. Rajput

1. Frequency distribution.
2. Graphical presentation of Data.

Name of Faculty: Prof. M. S. Goundadkar

1. Environmental and hormonal effects on determination of sex.
2. Sex Linked Inheritance in Drosophila and Man, Hemophilia and colour blindness in Man, Sex linkage in poultry.
3. Y - linked genes in man.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2018 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Porifera: Canal system, Spicules, Spongin-fibres and Gemmule.
2. Coelenterate: General characters & Classification up to classes with examples.

Name of Faculty: Dr. P. A. Deshpande

1. Parasitology – *Entamoeba histolytica*
2. Parasitology – *Taenia solium*
3. Parasitology – Ascaris

Name of Faculty: Dr. A. P. Rajput

1. Aschelminthes: General characters & classification up to classes with examples.
2. Parasitic adaptations in Aschelminthes.

Name of Faculty: Prof. M. S. Goundadkar

1. Mollusca: General characters & Classification up to classes with examples.
2. Type study *Pila globosa* External characters.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2018 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Circulation: Neurogenic and Myogenic Hearts.
2. Structure, function & regulation of Myogenic heart, Blood pressure.
3. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.
4. Physiology of Urine formation in Man. Ornithine cycle.

Name of Faculty: Dr. P. A. Deshpande

1. Clinical importance of enzymes
2. Water soluble vitamins
3. Fat soluble vitamins

Name of Faculty: Dr. A. P. Rajput

1. Immunology: Bone marrow, thymus, spleen-Payer's patches. T and B cells .Types and Significance.
2. Antigens and Antibodies.

Name of Faculty: Prof. M. S. Goundadkar

1. Extra embryonic membranes in mammals.
2. Human Development up to Implantation.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2018 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wild Life Conservation Techniques', methods and measures.
2. Brief account of IUCN, WWF, Bombay Natural History Society.
3. Indian Board for Wild Life, Red Data Book.

Name of Faculty: Dr. P. A. Deshpande

1. Evolution of Man.
2. Evolution of horse.
3. Palaeontology: Mesozoic reptiles.

Name of Faculty: Dr. A. P. Rajput

1. Theories of Organic Evolution: Lamarkism, Darwinism, Mutation Theory and the Modern Synthesis Theory.
2. Population gene Pool, Gene Frequency.

Name of Faculty: Prof. M. S. Goundadkar

1. Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves
2. Terrestrial habitat — A brief account of Biomes.
3. Ecological Adaptations — Freshwater, Marine and Terrestrial.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2018 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Complimentary Factors – Flower colour in sweet peas.
2. Lethal genes – Coat colour in mice.
3. Multiple alleles: ABO blood group and Rh factor in human.

Name of Faculty: Dr. P. A. Deshpande

1. Agricultural applications of biotechnology - Improvements in crop yield.
2. Industrial applications of biotechnology: Ethanol production, Food processing, Food fermentors& industrial enzymes.
3. Environmental applications- Cleaning up environmental pollutants and bioremediation.

Name of Faculty: Dr. A. P. Rajput

1. Measures of Central Tendency - Mean, Median and Mode
2. Measures of variation.

Name of Faculty: Prof. M. S. Goundadkar

1. Mutations – Chromosomal aberrations. Molecular basis of gene mutation & types.
2. Human Genetics: Human Genetic disorders.
3. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell anemia, Thalassemia, Huntington's Chorea.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in October 2018 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Structure & life history of Obella. Polymorphism.

Name of Faculty: Dr. P. A. Deshpande

1. Parasitology – *Wucheria bancrofti*
2. Ectoparasites – Ticks and mites.

Name of Faculty: Dr. A. P. Rajput

1. Echinodermata: General characters & classification up to classes with examples.
2. Type study-Starfish-External characters, Digestive system.
3. Water vascular system, and Echinoderm larvae.

Name of Faculty: Prof. M. S. Goundadkar

1. Digestive system. Respiratory system.
2. Nervous system & Reproductive system.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in October 2018 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Muscle Contraction: Ultra structure of striated muscle.
2. The role of myosin, actin, tropomyosin and tropionin.
3. Mechanism of muscle contraction - Sliding filament theory.
4. Chemical changes during muscle contraction. Structure and function of neuromuscular junction.

Name of Faculty: Dr. P. A. Deshpande

1. Concepts of bioenergetics: Glycolysis.
2. Krebs cycle, Electron Transport system.

Name of Faculty: Dr. A. P. Rajput

1. Structure of Immunoglobins G (IgG) & Immunization.

Name of Faculty: Prof. M. S. Goundadkar

1. Physiology of Respiration: Transport of Oxygen & Carbon dioxide.
2. Chloride shift, Respiratory Pigments.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in October 2018 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wild Life Act 1972 and its amendments in India, CITES.
2. Project Tiger and Biosphere Reserve.

Name of Faculty: Dr. P. A. Deshpande

1. Palaeontology: Mesozoic reptiles, with a note on Dinosaurs.

Name of Faculty: Dr. A. P. Rajput

1. Variations — gene mutation, chromosomal mutation;
2. Isolation and recombination. Genetic drift. Hardy-Weinberg equilibrium.

Name of Faculty: Prof. M. S. Goundadkar

1. Community Ecology-Community structure, Ecological niches.
2. Edge effect, Stratification, Ecotone.
3. Population Ecology: Density, natality, mortality.
4. Age distribution Population growth, types and curves.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in October 2018 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Linkage and Crossing over - Linkage in Drosophila.
2. Significance of Crossing over.

Name of Faculty: Dr. P. A. Deshpande

1. Medical applications of biotechnology: Gene testing, Gene therapy, Drug discovery.
2. Diagnosis of inherited disorders, Personal identification.

Name of Faculty: Dr. A. P. Rajput

1. Probability, Chi-Square Test

Name of Faculty: Prof. M. S. Goundadkar

1. Genetic Code and Protein Biosynthesis.
2. Properties of genetic code and Mechanism of biosynthesis.
3. Wooble hypothesis.

Month-wise Syllabus Distribution for 2019-20

Name of Faculty: Prof. A. A. Halgekar

B. Sc. I Sem

June - July 2019

1. Protozoa: General characters & Classification up to classes with examples.
2. General Topics - Locomotion and Nutrition in Protozoa.
3. Porifera: General characters & Classification up to classes with examples.

August 2019

1. Type study - Sycon: Structure & Life history.
2. Porifera: Canal system, Spicules, Spongin-fibres and Gemmule.

September 2019

1. Coelenterate: General characters & Classification up to classes with examples.
2. Structure of Obelia.

October 2019

1. Life history of Obelia, Polymorphism.

Name of Faculty: Prof. A. A. Halgekar

B. Sc. V Sem

Paper – I

June - July 2019

1. Wildlife Conservation: Wild life conservation methods.
2. Wildlife in India.
3. Causes for the depletion of wildlife.

August 2019

1. Wild Life Conservation Techniques', methods and measures.
2. Brief account of ; IUCN, WWF, Bombay Natural History Society.

September 2019

1. Indian Board for Wild Life, Red Data Book.
2. Wild Life Act 1972 and its amendments in India, CITES.

October 2019

1. Project Tiger and Biosphere Reserve.

Month-wise Syllabus Distribution for 2019-20

Name of Faculty: Prof. P. P. Naik

B. Sc. III Sem

June- July 2019

1. Carbohydrates: Definition, Classification and Biological Significance.
2. Proteins: Definition, Classification and Biological Significance.
3. Lipids: Definition, Classification and Biological Significance.
4. Physiology of Digestion: Introduction, Structure of alimentary canal.

August 2019

1. Digestion and absorption of proteins, carbohydrates and lipids.
2. Concept of Balanced diet.
3. Physiology of Circulation: Structure of heart.
4. Functions and double circulation of mammalian heart.

September 2019

1. Types of heart – Neurogenic and Myogenic hearts. Blood pressure.
2. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.
3. Physiology of Urine formation in Man.
4. Ornithine cycle.

October 2019

1. Ornithine cycle.

Name of Faculty: Prof. P. P. Naik

B. Sc. V Sem

Paper – II

June2019

1. Genetics – Introduction to Genetics.
2. Heredity and variation.
3. Mendel and his contribution.
4. Monohybrid cross.

July 2019

1. Dihybrid cross with examples.
2. Definition of genetic terminologies.
3. Interaction of genes: Supplementary factors – Comb pattern in fowls.

August 2019

1. Dominant Epistasis; Plumage colour in Leghorn and Wyandotte.
2. Recessive Epistasis: Coat colour in sweet peas.
3. Complimentary Factors – Flower colour in sweet peas.
4. Lethal genes – Coat colour in mice.

September 2019

1. Multiple alleles: ABO blood group and Rh factor in human.
2. Linkage and Crossing over - Linkage in Drosophila.

October 2019

1. Significance of Crossing over.

Month-wise Syllabus Distribution for 2019-20

Name of Faculty: Dr. P. A. Deshpande

B. Sc. I Sem

June - July 2019

1. Phylum Annelida- General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.
3. *Pheretima posthuma*: Nervous system.

August 2019

1. *Pheretima posthuma*: Circulatory system.
2. *Pheretima posthuma*: Reproductive system.
3. Parasitology – *Plasmodium vivax*

September 2019

1. Parasitology – *Wucheria bancrofti*
2. Parasitology – *Entamoeba histolytica*
3. Parasitology – *Taenia solium*
4. Parasitology – Ascaris.

October 2019

1. Ectoparasites – Ticks and mites.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. III Sem

June - July 2019

1. Enzymes: Definition, IUB classification of enzymes.
2. Mechanism of enzyme action.
3. Specificity of enzymes, reversibility of enzymes.
4. Enzyme inhibitors.
5. Brief account of coenzymes and cofactors.
6. Clinical importance of enzymes
7. Fat soluble vitamins (A, D, E and K).

August 2019

1. Water soluble vitamins (B complex and C).
2. Glycolysis.
3. Kreb's cycle.

September 2019

1. Electron Transport System.
2. Physiology of Muscle contraction: Ultra structure of striated muscle.
3. Structure of myosin, actin, tropomyosin and tropionin.
4. Mechanism of muscle contraction.

October 2019

1. Sliding filament theory.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. V Sem

Paper – I

June - July 2019

1. Biogeochemical cycles: Water cycle, Carbon cycle.
2. Community ecology: Community structure, Ecological niche.
3. Stratification, Ecotone and Edge effect.

August 2019

1. Population ecology: Density, Natality, Mortality.
2. Age distribution.
3. Population growth: Types and curves.

September 2019

1. Evolution of Man
2. Evolution of horse
3. Palaeontology: Mesozoic reptiles.

October 2019

1. Palaeontology: A note on Dinosaurs.

Name of Faculty: Dr. P. A. Deshpande

B. Sc. V Sem

Paper – II

June - July 2019

1. Biotechnology - Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Branches of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.

August 2019

1. Molecular biotechnology: Genetic engineering, Gene cloning.
2. Molecular biotechnology: Isolation of DNA, Vectors, Restriction enzymes,
3. Polymerase Chain Reaction (PCR), DNA fingerprinting.

September 2019

1. Industrial applications of biotechnology: Ethanol production, Food processing, Food fermentors& industrial enzymes.
2. Environmental applications- Cleaning up environmental pollutants.

October 2019

1. Bioremediation.

Month-wise Syllabus Distribution for 2019-20

Name of Faculty: Dr. B. B. Goundadkar

B. Sc. I Sem

June - July 2019

1. Taxonomy: Binomial nomenclature and concept of Species.
2. Platyhelminthes: General characters & Classification up to classes with examples.
3. Platyhelminthes: Type Study-*Fasciola hepatica* - External characters.
4. Reproductive system & Life history.

August 2019

1. Parasitic adaptation in Platyhelminthes.
2. Aschelminthes: General characters & classification up to classes with examples.
3. Parasitic adaptations in Aschelminthes.

September 2019

1. Echinodermata: General characters & classification up to classes with examples.
2. Type study-Starfish- External characters, Digestive system, Water vascular system.

October 2019

1. Echinoderm larvae.

Name of Faculty: Dr. B. B. Goundadkar

B. Sc. III Sem

June - July 2019

1. Brief account of Gametogenesis and Fertilization.
2. Physiology of Nervous Coordination: Structure and propagationof nerve impulse in medullated and non medullated Nerve.
3. Synaptic transmission and Neuro-muscular Junction.
4. Neuro-transmitters and their importance.

August 2019

1. Structure & organs related to Vision and Olfaction in Human being.

September 2019

1. Structure & organs related to audition in Human being.
2. Immunology: Bone marrow, thymus, spleen-Payer's patches.T and B cells .Types and Significance.
3. Antigensand Antibodies.

October 2019

1. Structure of Immunoglobins G (IgG) & Immunization.

Name of Faculty: Dr. B. B. Goundadkar

B. Sc. V Sem

Paper – I

June - July 2019

1. The geological time scale and fossils.
2. Origin of Earth.
3. Origin of Life and its theories.
4. Fossils: Definition and Kinds of fossils, How fossils are formed, Methods of Preservation.
5. Connecting links and Living fossils.
6. The Importance of fossils

August 2019

1. Theories of Organic Evolution: Lamarkism, Darwinism, Mutation Theory and the Modern Synthesis Theory.
2. Population gene Pool.
3. Gene Frequency.
4. Variations
5. Gene mutation.

September 2019

1. Isolation and recombination.
2. Genetic drift.
3. Hardy-Weinberg equilibrium.
4. Zoogeographical realms of the world with emphasis on climatic conditions and biodiversity of area.

October 2019

1. A brief account of Wallace line.

Name of Faculty: Dr. B. B. Goundadkar

B. Sc. V Sem

Paper – II

June - July 2019

1. Biostatistics: Fundamentals of Biostatistics
2. Preliminary Concepts.
3. Frequency distribution.
4. Graphical presentation of Data.

August 2019

1. Measures of Central Tendency - Mean, Median and Mode.

September 2019

1. Measures of variation.
2. Probability.

October 2019

1. Chi-Square Test.

Month-wise Syllabus Distribution for 2019-20

Name of Faculty: Prof. D. R. Shimpi

B. Sc. I Sem

June - July 2019

1. Arthropoda:General characters & Classification up to classes with examples.
2. Type study: Prawn - Externals characters, Digestive system.

August 2019

1. Type study prawn: Nervous system & Reproductivesystem.
2. Appendages of prawn.
3. Mouth parts of Cockroach,House fly, Butter fly & Mosquito.

September 2019

1. Mollusca: General characters & Classification up to classes with examples.
2. Type study *Pila globosa*: External characters.
3. Digestive system. Respiratory system.

October 2019

1. Type study *Pila globosa*: Nervous system & Reproductive system.

Name of Faculty: Prof. D. R. Shimpi

B. Sc. III Sem

June - July 2019

1. Types of Eggs, Cleavage patterns.
2. Development of Frog up to Gastrulation.
3. Organizer phenomenon.

August 2019

1. Chick development up to 48 hours chick embryo.
2. Placenta types Structure and Functions.

September 2019

1. Extra embryonicmembranes in mammals.
2. Human Development up to Implantation.

October 2019

1. Physiology of Respiration: Transport of Oxygen & Carbon dioxide.
2. Chloride shift, Respiratory Pigments.

Name of Faculty: Prof. D. R. Shimpi

B. Sc. V Sem

Paper I

June - July 2019

1. Earth as Living.-Planet. Sub divisions of ecology, Scope of ecology, Biosphere.
2. Ecosystem: Components of ecosystem (Abiotic and Biotic factors).
3. Significance of biotic and abiotic factors.
4. Abiotic factors- Light, Temperature (Effect on Animals and Plants)

August 2019

1. Food chain, food web.
2. Mutualism, Commensalism, Amensialism, Parasitism, Predation, Competition, Parasitism.
3. Habitats - Freshwater habitat - Lotic and Lentic systems.

September 2019

1. Marine habitat – Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves.
2. Terrestrial habitat — A brief account of Biomes.

October 2019

1. Ecological Adaptations — Freshwater, Marine and Terrestrial.

Name of Faculty: Prof. D. R. Shimpi

B. Sc. V Sem

Paper II

June - July 2019

1. Sex Determination: Chromosomal mechanism of sex determination.
2. Genic balance theory, Gynandomorphs, and intersexes.
3. Syndromes in human- Klinefelter and Turners.
4. Environmental and hormonal effects on determination of sex.

August 2019

1. Sex Linked Inheritance in Drosophila and Man, Hemophilia and colour blindness in Man, Sex linkage in poultry.
2. Y - linked genes in man.
3. Mutations – Chromosomal aberrations.
4. Molecular basis of gene mutation & types.

September 2019

1. Human Genetics: Human Genetic disorders.
2. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell aneamia, Thalassemia, Huntington's chorea.

October 2019

1. Genetic Code and Protein Biosynthesis.
2. Properties of genetic code andMechanism of biosynthesis.
3. Wooble hypothesis.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2019 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Protozoa: General characters & Classification up to classes with examples.
2. General Topics - Locomotion and Nutrition in Protozoa
3. Porifera: General characters & Classification up to classes with examples.

Name of Faculty: Dr. P. A. Deshpande

1. Phylum Annelida- General characters & classification up to classes.
2. Type study - *Pheretima posthuma*: Externals, Digestive, Excretory system.
3. *Pheretima posthuma*: Nervous system.

Name of Faculty: Dr. B. B. Goundadkar

1. Taxonomy: Binomial nomenclature and concept of Species.
2. Platyhelminthes: General characters & Classification up to classes with examples.
3. Platyhelminthes: Type Study-*Fasciola hepatica* - External characters.
4. Reproductive system & Life history.

Name of Faculty: Prof. D. R. Shimpi

1. Arthropoda: General characters & Classification up to classes with examples.
2. Type study Prawn- Externals characters, Digestive system.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2019 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Coelenterate: General characters & Classification up to classes with examples.
2. Structure of Obelia.

Name of Faculty: Dr. P. A. Deshpande

1. Parasitology – *Plasmodium vivax*
2. Parasitology – *Entamoeba histolytica*
3. Parasitology – *Taenia solium*
4. Parasitology – Ascaris

Name of Faculty: Dr. B. B. Goundadkar

1. Echinodermata: General characters & classification up to classes with examples.
2. Type study-Starfish- External characters, Digestive system, Water vascular system.

Name of Faculty: Prof. D. R. Shimpi

1. Mollusca: General characters & Classification up to classes with examples.
2. Type study *Pila globosa*: External characters.
3. Digestive system. Respiratory system.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2019 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Carbohydrates: Definition, Classification and Biological Significance.
2. Proteins: Definition, Classification and Biological Significance.
3. Lipids: Definition, Classification and Biological Significance.
4. Physiology of Digestion: Introduction, Structure of alimentary canal.

Name of Faculty: Dr. P. A. Deshpande

1. Enzymes: Definition, IUB classification of enzymes.
2. Mechanism of enzyme action.
3. Specificity of enzymes, reversibility of enzymes.
4. Enzyme inhibitors.
5. Brief account of coenzymes and cofactors.
6. Clinical importance of enzymes
7. Fat soluble vitamins (A, D, E and K)

Name of Faculty: Dr. B. B. Goundadkar

1. Brief account of Gametogenesis and Fertilization.
2. Physiology of Nervous Coordination: Structure and propagation of nerve impulse in medullated and non medullated Nerve.
3. Synaptic transmission and Neuro-muscular Junction.
4. Neuro-transmitters and their Importance.

Name of Faculty: Prof. D. R. Shimpi

1. Types of Eggs, Cleavage patterns.
2. Development of Frog up to Gastrulation.
3. Organizer phenomenon.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in September 2019 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Types of heart – Neurogenic and Myogenic hearts. Blood pressure.
2. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.
3. Physiology of Urine formation in Man.

Name of Faculty: Dr. P. A. Deshpande

1. Electron Transport System.
2. Physiology of Muscle contraction: Ultra structure of striated muscle.
3. Structure of myosin, actin, tropomyosin and tropionin.
4. Mechanism of muscle contraction.

Name of Faculty: Dr. B. B. Goundadkar

1. Structure & organs related to audition in Human being.
2. Immunology: Bone marrow, thymus, spleen-Payer's patches. T and B cells. Types and Significance.
3. Antigens and Antibodies.

Name of Faculty: Prof. D. R. Shimpi

1. Extra embryonic membranes in mammals.
2. Human Development up to Implantation.

S. K. E. Society's
G. S. Sc. College, Belagavi

Department of Zoology

Syllabus to be covered in June - July 2019 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wildlife Conservation :Wild life conservation methods
2. Wildlife in India.
3. Causes for the depletion of wildlife.

Name of Faculty: Dr. P. A. Deshpande

1. Biogeochemical cycles: Water cycle, Carbon cycle.
2. Community ecology: Community structure, Ecological niche.
3. Stratification, Ecotone and Edge effect.

Name of Faculty: Dr. B. B. Goundadkar

1. The geological time scale and fossils.
2. Origin of Earth.
3. Origin of Life and its theories.
4. Fossils: Definition and Kinds of fossils, How fossils are formed, Methods of Preservation.
5. Connecting links and Living fossils.
6. The Importance of fossils

Name of Faculty: Prof. D. R. Shimpi

1. Earth as Living.-Planet. Sub divisions of ecology, Scope of ecology, Biosphere.
2. Ecosystem: Components of ecosystem (Abiotic and Biotic factors).
3. Significance of biotic and abiotic factors.
4. Abiotic factors- Light, Temperature (Effect on Animals and Plants)

S. K. E. Society's
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Department of Zoology

Syllabus to be covered in September 2019 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Indian Board for Wild Life, Red Data Book.
2. Wild Life Act 1972 and its amendments in India, CITES.

Name of Faculty: Dr. P. A. Deshpande

1. Evolution of Man
2. Evolution of horse
3. Palaeontology: Mesozoic reptiles.

Name of Faculty: Dr. B. B. Goundadkar

1. Isolation and recombination.
2. Genetic drift.
3. Hardy-Weinberg equilibrium.
4. Zoogeographical realms of the world with emphasis on climatic conditions and biodiversity of area.

Name of Faculty: Prof. D. R. Shimpi

1. Marine habitat – Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves.
2. Terrestrial habitat — A brief account of Biomes.

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Department of Zoology

Syllabus to be covered in June - July 2019 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Genetics – Introduction to Genetics.
2. Heredity and variation.
3. Mendel and his contribution.
4. Monohybrid cross.
5. Dihybrid cross with examples.
6. Definition of genetic terminologies.
7. Interaction of genes: Supplementary factors – Comb pattern in fowls.

Name of Faculty: Dr. P. A. Deshpande

1. Biotechnology- Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Branches of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.

Name of Faculty: Dr. B. B. Goundadkar

1. Biostatistics: Fundamentals of Biostatistics
2. Preliminary Concepts.
3. Frequency distribution
4. Graphical presentation of Data

Name of Faculty: Prof. D. R. Shimpi

1. Sex Determination: Chromosomal mechanism of sex determination
2. Genic balance theory, Gynandomorphs, and Intersexes.
3. Syndromes in human- Klinefelter and Turners.
4. Environmental and hormonal effects on determination of sex.

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Department of Zoology

Syllabus to be covered in September 2019 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Multiple alleles: ABO blood group and Rh factor in human.
2. Linkage and Crossing over - Linkage in Drosophila.

Name of Faculty: Dr. P. A. Deshpande

1. Industrial applications of biotechnology: Ethanol production, Food processing, Food fermentors& industrial enzymes.
2. Environmental applications- Cleaning up environmental pollutants.

Name of Faculty: Dr. B. B. Goundadkar

1. Measures of variation.
2. Probability.

Name of Faculty: Prof. D. R. Shimpi

1. Human Genetics: Human Genetic disorders
2. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell aneamia, Thalassemia. Huntington's chorea.

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Department of Zoology

Syllabus to be covered in December 2019 – January 2020 for B. Sc. II Semester

Name of Faculty: Prof. A. A. Halgekar

1. General Characters and Classification of Aves up to orders.
2. Type study – Pigeon – External characters.
3. Type study – Pigeon: Digestive System.
4. Reproductive system (Male and Female).

Name of Faculty: Dr. P. A. Deshpande

1. Mammalia: General characters & classification up to order with examples.

Name of Faculty: Dr. B. B. Goundadkar

1. Comparative anatomy - Origin, development & structure of Heart in,
   a) Fishes
   b) Amphibians
   c) Reptiles

Name of Faculty: Prof. D. R. Shimpi

1. Chordates: General characters and classification.
2. Sub-phylum: Hemichordata - External Characters & Digestive system of Balanoglossus.
3. Sub-phylum: Urochordata- External Characters& Retrogressive metamorphosis in Herdmania.

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Department of Zoology

Syllabus to be covered in December 2019 – January 2020 for B. Sc. IV Semester

Name of Faculty: Prof. P. P. Naik

1. Cell Biology – Ultra structure of animal cell. Cell theory and cell cycle.
2. Ultra structure and function of cell organelles:
   a) Plasma membrane
   b) Endoplasmic reticulum

Name of Faculty: Dr. P. A. Deshpande

1. Study of histological structure and functions of the following Mammalian organs:
   a) Stomach
   b) Intestine

Name of Faculty: Dr. B. B. Goundadkar

1. Innate behaviour: Taxes, Reflexes, Instincts, motivation.
2. Learned behaviour: Habituation, Imprinting, Condition reflexes, Insight learning.

Name of Faculty: Prof. D. R. Shimpi

1. Study of histological structure and functions of the following Mammalian organs,
   a) Tongue
   b) Salivary glands
2. Cellular Aging & Cell Death.
3. Concept of Aging theories.
4. Effect of Aging on Cell organelles.

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Department of Zoology

Syllabus to be covered in December 2019 – January 2020 for B. Sc. VI Semester (Paper 1)

Name of Faculty: Prof. P. P. Naik

1. Poultry: Scope of poultry, breeds of poultry.
2. Diseases of poultry.
3. Maintenance of poultry farm.

Name of Faculty: Dr. P. A. Deshpande

1. Dairy technology: Indigenous cattle breeds.
2. Exotic breeds of cattles.
3. Breeds of buffaloes.

Name of Faculty: Dr. B. B. Goundadkar

1. Sericulture: Mulberry Silkworm and Life History of *Bombyx mori*.
2. Rearing of Silkworm: Rearing appliances, maintenance of rearing room.

Name of Faculty: Prof. D. R. Shimpi

1. Apiculture: Species of honey bees, life history.
2. Methods of bee keeping.
3. Products of bees and their economic importance.
4. Aquaculture: Prawn Fisheries, Species of Prawns.

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Department of Zoology

Syllabus to be covered in December 2019 – January 2020 for B. Sc. VI Semester (Paper 2)

Name of Faculty: Prof. A. A. Halgekar

1. Sterilization Techniques.
2. Use of hot air oven.
3. Chemical sterilization.
4. Bacteria structure and classification based on shapes.

Name of Faculty: Dr. P. A. Deshpande

1. Introduction: History, Name of Tools and Techniques in Nanotechnology.
2. Applications of Nano in biology: Nano drug Administration.
3. Diagnostics and Therapeutic Applications.

Name of Faculty: Dr. B. B. Goundadkar

1. Bioinformatics: Definition, Goals of Bioinformatics, Sequencing.
2. Classification of Biological Data Bases. Characteristic of FASTA and BLAST.
3. Aims and goals of Human Genome Project.

Name of Faculty: Prof. D. R. Shimpi

1. Oral microbial flora of human body.
2. Role of microbes in environment.
3. Proteomics.

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Department of Zoology

Syllabus to be covered in February 2020 for B. Sc. II Semester

Name of Faculty: Prof. A. A. Halgekar

1. Respiratory system.
2. Bird migration.
3. Flight adaptations.
4. Flightless birds.

Name of Faculty: Dr. P. A. Deshpande

1. Amphibia: General characters & classification up to orders with examples.
2. Type study Frog - Externals characters, Digestive system.
3. Circulatory & Reproductive system.
4. Axolotl larva & its significance.

Name of Faculty: Dr. B. B. Goundadkar

1. Comparative anatomy - Origin, development & structure of Heart in Aves and Mammals.
2. Comparative anatomy - Origin, development & structure of Brain in,
   a) Fishes
   b) Amphibians
   c) Reptiles

Name of Faculty: Prof. D. R. Shimpi

1. Subphylum: Cephalochordata –External Characters & feeding mechanism in Branchiostoma.
2. Cyclostomata: External Characters & general organisation of Petromyzon & Myxine (Hagfish/Slime).
3. Pisces: General characters & classification up to orders with examples.

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Department of Zoology

Syllabus to be covered in February 2020 for B. Sc. IV Semester

Name of Faculty: Prof. P. P. Naik

1. Ultra structure and function of cell organelles:
   a) Lysosomes
   b) Ribosomes
   c) Golgi complex
   d) Mitochondria

Name of Faculty: Dr. P. A. Deshpande

1. Study of histological structure and functions of the following Mammalian organs:
   a) Liver
   b) Kidney

Name of Faculty: Dr. B. B. Goundadkar

1. Social behaviour: Types of Animal society, Colony in Honey bees, Monkey troops.
2. Territoriality and Courtship behaviour.
3. Study of nesting behaviour and mimicry in animals.
4. Biological clock: Circadian rhythm and Chronobiology.

Name of Faculty: Prof. D. R. Shimpi

1. Apoptosis, Necrosis - Definition & significance.
2. Cancer Biology: Introduction.
3. Characteristics of cancer cells.
4. Carcinogens, cause & prevention.

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Department of Zoology

Syllabus to be covered in February 2020 for B. Sc. VI Semester (Paper 1)

Name of Faculty: Prof. P. P. Naik

1. Backyard and cage system of rearing.
2. Composition of egg and nutritive value of egg.
3. Vermitechnology: Earthworm species used in Vermitechnology.

Name of Faculty: Dr. P. A. Deshpande

1. Diseases of cattles and buffaloes.
2. Products and by-products of dairy technology.
3. Composition and nutritive value of cow milk.
4. Composition and nutritive value of buffalo milk.

Name of Faculty: Dr. B. B. Goundadkar

1. Chawki rearing, late age rearing.
2. Spinning of cocoons, cocoon processing, stiffling and reeling.
3. Silkworm diseases: Muscardine, Grasserie, Flacherie & Pebrine.

Name of Faculty: Prof. D. R. Shimpi

1. Culture of freshwater Prawns.
2. Culture of marine Prawns.
3. Preservation and processing of Prawns.

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G. S. S. College, Belagavi

Department of Zoology

Syllabus to be covered in February 2020 for B. Sc. VI Semester (Paper 2)

Name of Faculty: Prof. A. A. Halgekar

1. Reproduction and growth.
2. Morphology, Chemical properties of virus.
3. Classification of virus.
4. DNA and RNA virus.

Name of Faculty: Dr. P. A. Deshpande

1. Techniques of cell fraction and centrifugation.
2. DNA sequencing, in situ hybridization, DNA microchips.
3. Genetic engineering in animals.

Name of Faculty: Dr. B. B. Goundadkar

1. Research methodology: Meaning and objectives of research.
2. Motivation in research.
3. Research and scientific method.
4. Understanding the research problem.

Name of Faculty: Prof. D. R. Shimpi

1. Microscopy: Compound microscope and its function.
2. Dark field microscope.
3. Fluorescent microscope.

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Department of Zoology

Syllabus to be covered in April 2020 for B. Sc. II Semester

Name of Faculty: Prof. A. A. Halgekar

1. Excretory system.
2. Rat: Reproductive system.

Name of Faculty: Dr. P. A. Deshpande

1. Calotes: Reproductive system.
2. Indian poisonous & non-poisonous snakes.

Name of Faculty: Dr. B. B. Goundadkar

1. Comparative anatomy - Origin, development & structure of integument in Aves and mammals.

Name of Faculty: Prof. D. R. Shimpi

1. Fish migration.

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Department of Zoology

Syllabus to be covered in April 2020 for B. Sc. IV Semester

Name of Faculty: Prof. P. P. Naik

1. Cell division Types - Meiosis.

Name of Faculty: Dr. P. A. Deshpande

1. Study of histological structure and Endocrine functions of the following Mammalian organs:
   a) Ovary
   b) Pituitary
   c) Adrenal
   d) Thymus

Name of Faculty: Dr. B. B. Goundadkar

1. Parental care in amphibians and birds.

Name of Faculty: Prof. D. R. Shimpi

1. Brief Contributions of Konard Lorenz, NikoTinbergen and Karl Von Frisch.

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Department of Zoology

Syllabus to be covered in April 2020 for B. Sc. VI Semester (Paper 1)

Name of Faculty: Prof. P. P. Naik

1. Brief account of vermiwash and vermicast.

Name of Faculty: Dr. P. A. Deshpande

1. By-products of Pisciculture.

Name of Faculty: Dr. B. B. Goundadkar

1. Integrated pest management.

Name of Faculty: Prof. D. R. Shimpi

1. Pearl Industry: Artificial Insertion of nucleus.

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Department of Zoology

Syllabus to be covered in April 2020 for B. Sc. VI Semester (Paper 2)

Name of Faculty: Prof. A. A. Halgekar

1. Criteria for the selection of microorganisms, Production of antibodies (Penicillin, Streptomycin).
2. Enzyme protease and riboflavin.

Name of Faculty: Dr. P. A. Deshpande

1. Radioisotopes techniques in Biochemistry.
2. Biological applications of Radioisotopes.

Name of Faculty: Dr. B. B. Goundadkar

1. Role of computer in research.

Name of Faculty: Prof. D. R. Shimpi

1. Uses of different types of microscopes.

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G. S. S. College, Belagavi

Department of Zoology

Syllabus to be covered in November – December 2020 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. General characters of Aves.
2. Salient features of Passeriformes.
3. Salient features of Pisciformes.
4. Salient features of Columbiformes.
5. General characters of mammals.

Name of Faculty: Dr. P. A. Deshpande

1. Phylum Chordata: Characters of Chordates.
2. Differences between chordates and non-chordates.
3. General features of Protochordata (Brief note on Hemichordata, Urochordata and Cephalochordata).
4. General features of Agnatha and Gnathostomata.
5. Classification of cyclostomes.

Name of Faculty: Dr. B. B. Goundadkar

1. Annelida: General characters and classification upto classes.
2. Metamerism in Annelida.
3. Arthropoda: General characters and classification upto classes.

Name of Faculty: Prof. D. R. Shimpi

1. Protista: General characters & classification up to classes with examples.
2. Locomotion in Protozoa.
3. Porifera: General characters & classification up to classes with examples.
4. Canal system in *Sycon*.

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Department of Zoology

Syllabus to be covered in November – December 2020 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Carbohydrates: Definition, Classification and Biological Significance.
2. Proteins: Definition, Classification and Biological Significance.
3. Lipids: Definition, Classification and Biological Significance.

Name of Faculty: Dr. P. A. Deshpande

1. Bioenergetics: Glycolysis.
2. Bioenergetics: Kreb's cycle.
3. Bioenergetics: Electron Transport System.
4. Physiology of Muscle contraction: Ultra structure of striated muscle.
5. Structure of myosin, actin, tropomyosin and tropionin.

Name of Faculty: Dr. B. B. Goundadkar

1. Brief account of Gametogenesis and Fertilization.
2. Physiology of Nervous Coordination: Structure and propagation of nerve impulse in medullated and non medullated Nerve.
3. Synaptic transmission and Neuro-muscular junction.

Name of Faculty: Prof. D. R. Shimpi

1. Types of Eggs, Cleavage patterns.
2. Development of Frog up to Gastrulation.
3. Organizer phenomenon.
4. Chick development up to 48 hours' chick embryo.

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Department of Zoology

Syllabus to be covered in November – December 2020 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wildlife Conservation: Wild life conservation methods.
2. Wildlife in India.
3. Causes for the depletion of wildlife.
4. Wild Life Conservation Techniques', methods and measures.

Name of Faculty: Dr. P. A. Deshpande

1. Evolution of Man.
2. Evolution of horse.
3. Biogeochemical cycles: Water cycle, Carbon cycle.
4. Biogeochemical cycles: Nitrogen cycle.

Name of Faculty: Dr. B. B. Goundadkar

1. The geological time scale and fossils.
2. Origin of Earth.
3. Origin of Life and its theories.
4. Fossils: Definition and Kinds of fossils, how fossils are formed, Methods of Preservation.
5. Connecting links and Living fossils.
6. The importance of fossils.

Name of Faculty: Prof. D. R. Shimpi

1. Earth as Living Planet. Sub divisions of ecology, Scope of ecology, Biosphere.
2. Ecosystem: Components of ecosystem (Abiotic and Biotic factors).
3. Significance of biotic and abiotic factors.
4. Abiotic factors- Light, Temperature (Effect on Animals and Plants).

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Department of Zoology

Syllabus to be covered in November – December 2020 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Genetics – Introduction to Genetics.
2. Heredity and variation.
3. Mendel and his contribution.
4. Monohybrid cross.
5. Dihybrid cross with examples.

Name of Faculty: Dr. P. A. Deshpande

1. Biotechnology - Introduction, Sub-fields of biotechnology, History of biotechnology, Biotechnology scenario in India.
2. Branches of biotechnology: Animal biotechnology, Plant biotechnology, Microbial biotechnology, Environmental biotechnology, Medical biotechnology.
3. Molecular biotechnology: Genetic engineering, Gene cloning.

Name of Faculty: Dr. B. B. Goundadkar

1. Biostatistics: Fundamentals of Biostatistics
2. Preliminary Concepts.
3. Frequency distribution.
4. Graphical presentation of Data.

Name of Faculty: Prof. D. R. Shimpi

1. Sex Determination: Chromosomal mechanism of sex determination.
2. Genic balance theory, Gynandromorphs, and intersexes.
3. Syndromes in human- Klinefelter and Turners.
4. Environmental and hormonal effects on determination of sex.

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Department of Zoology

Syllabus to be covered in January 2021 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Salient features of Monotremes, Marsupilia.
2. Salient features of Insectivora.
3. Salient features of Rodentia.
4. Salient features of Perissodactyla.

Name of Faculty: Dr. P. A. Deshpande

1. Pisces: General features and classification upto living orders.
2. Scales in Fishes.
3. Migration in Fishes.
4. Amphibia: General features.

Name of Faculty: Dr. B. B. Goundadkar

1. Metamorphusis in insects.
2. Mollusca: General characters & classification up to classes with examples.
3. Torsion in gastropoda.

Name of Faculty: Prof. D. R. Shimpi

1. Cnidaria: General characters & classification up to classes with examples.
2. Polymorphism.
3. Platyhelminthes: General characters & classification up to classes with examples.

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Department of Zoology

Syllabus to be covered in January 2021 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Physiology of Digestion: Introduction, Structure of alimentary canal.
2. Digestion and absorption of Proteins.
3. Digestion and absorption of carbohydrates and lipids.
4. Concept of Balanced diet.
5. Physiology of Circulation: Structure of heart.

Name of Faculty: Dr. P. A. Deshpande

1. Mechanism of muscle contraction.
2. Sliding filament theory.
3. Enzymes: Definition, IUB classification of enzymes.
4. Mechanism of enzyme action.

Name of Faculty: Dr. B. B. Goundadkar

1. Neuro-transmitters and their importance.
2. Immunology: Bone marrow, thymus, spleen - Payer's patches. T and B cells. Types and Significance.

Name of Faculty: Prof. D. R. Shimpi

1. Placenta types Structure and Functions.
2. Extra embryonic membranes in mammals.

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Department of Zoology

Syllabus to be covered in January 2021 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Brief account of IUCN, WWF, Bombay Natural History Society.
2. Indian Board for Wild Life.
3. Red Data Book.

Name of Faculty: Dr. P. A. Deshpande

1. Community ecology: Community structure, Ecological niche.
2. Stratification, Ecotone and Edge effect.
3. Population ecology: Density, Natality, Mortality.

Name of Faculty: Dr. B. B. Goundadkar

1. Theories of Organic Evolution: Lamarckism, Darwinism, Mutation Theory and the Modern Synthesis Theory.
2. Population gene Pool.
3. Gene Frequency.
4. Variations
5. Gene mutation.

Name of Faculty: Prof. D. R. Shimpi

1. Food chain, food web.
2. Mutualism, Commensalism, Amensialism, Parasitism, Predation, Competition, Parasitism.
3. Habitats - Freshwater habitat - Lotic and Lentic systems.

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Department of Zoology

Syllabus to be covered in January 2021 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Definition of genetic terminologies.
2. Interaction of genes: Supplementary factors – Comb pattern in fowls.
3. Dominant Epistasis; Plumage colour in Leghorn and Wyandotte.
4. Recessive Epistasis: Coat colour in sweet peas.

Name of Faculty: Dr. P. A. Deshpande

1. Molecular biotechnology: Isolation of DNA, Vectors, Restriction enzymes,
2. Polymerase Chain Reaction (PCR), DNA fingerprinting.
3. Industrial applications of biotechnology: Ethanol production, Food processing.

Name of Faculty: Dr. B. B. Goundadkar

1. Measures of Central Tendency - Mean, Median and Mode.

Name of Faculty: Prof. D. R. Shimpi

1. Sex Linked Inheritance in Drosophila and Man, Hemophilia and colour blindness in Man, Sex linkage in poultry.
2. Y - linked genes in man.
3. Mutations – Chromosomal aberrations.
4. Molecular basis of gene mutation & types.

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Department of Zoology

Syllabus to be covered in February 2021 for B. Sc. 1 Semester

Name of Faculty: Prof. A. A. Halgekar

1. Salient features of Chiroptera.
2. Salient features of Edentata.
3. Salient features of Cetaceae.
4. Salient features of Primates.

Name of Faculty: Dr. P. A. Deshpande

1. Amphibia: Classification upto living orders.
2. Parental care in amphibians.
3. Reptilia: General features and classification upto living orders.
4. Differences between poisonous and non-poisonous snakes.

Name of Faculty: Dr. B. B. Goundadkar

1. Echinodermata: General characters & classification up to classes with examples.
2. Water-vascular system in Asteroidea.

Name of Faculty: Prof. D. R. Shimpi

1. Parasitic adaptations.
2. Nemathelminthes: General characters & classification up to classes with examples.
3. Life-history of *Ascaris*.

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Syllabus to be covered in February 2021 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Functions and double circulation of mammalian heart.
2. Types of heart – Neurogenic and Myogenic hearts. Blood pressure.
3. Physiology of Excretion: Ammonotelic, Ureotelic & Uricotelic excretion with examples.

Name of Faculty: Dr. P. A. Deshpande

1. Specificity of enzymes, reversibility of enzymes.
2. Enzyme inhibitors.
3. Brief account of coenzymes and cofactors.
4. Clinical importance of enzymes.
5. Water soluble vitamins (B complex and C).

Name of Faculty: Dr. B. B. Gounadkar

1. Antigens and Antibodies.
2. Structure & organs related to audition in Human being.
3. Structure & organs related to Vision and Olfaction in Human being.

Name of Faculty: Prof. D. R. Shimpi

1. Human Development up to Implantation.
2. Physiology of Respiration: Transport of Oxygen & Carbon dioxide.
3. Chloride shift.

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Department of Zoology

Syllabus to be covered in February 2021 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Wild Life Act 1972 and its amendments in India.
2. CITES.
3. Project Tiger and Biosphere Reserve.

Name of Faculty: Dr. P. A. Deshpande

1. Age distribution.
2. Population growth: Types and curves.
3. Palaeontology: Mesozoic reptiles.

Name of Faculty: Dr. B. B. Goundadkar

1. Isolation and recombination.
2. Genetic drift.
3. Hardy-Weinberg equilibrium.
4. Zoogeographical realms of the world with emphasis on climatic conditions and biodiversity of area.

Name of Faculty: Prof. D. R. Shimpi

1. Marine habitat – Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves.
2. Terrestrial habitat — A brief account of Biomes.

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Department of Zoology

Syllabus to be covered in February 2021 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Complimentary Factors – Flower colour in sweet peas.
2. Lethal genes – Coat colour in mice.
3. Multiple alleles: ABO blood group and Rh factor in human.

Name of Faculty: Dr. P. A. Deshpande

1. Industrial applications of biotechnology: Food fermenters & industrial enzymes.
2. Environmental applications - Cleaning up environmental pollutants.

Name of Faculty: Dr. B. B. Goundadkar

1. Measures of variation.
2. Probability.

Name of Faculty: Prof. D. R. Shimpi

1. Human Genetics: Human Genetic disorders.
2. Inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell aneamia, Thalassemia. Huntington's chorea.
3. Genetic code and Protein biosynthesis.
4. Properties of genetic code and mechanism of biosynthesis.

S. K. E. Society's
G. S. S. College, Belagavi

Department of Zoology

Syllabus to be covered in March 2021 for B. Sc. I Semester

Name of Faculty: Prof. A. A. Halgekar

1. Repetition.

Name of Faculty: Dr. P. A. Deshpande

1. Snake bite and treatment.

Name of Faculty: Dr. B. B. Goundadkar

1. Repetition.

Name of Faculty: Prof. D. R. Shimpi

1. Parasitic adaptations in roundworms.

S. K. E. Society's
G. S. S. College, Belagavi

Department of Zoology

Syllabus to be covered in March 2021 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Physiology of Urine formation in Man.
2. Ornithine cycle.

Ornithine cycle

S. K. E. Society's
G. S. S. College, Belagavi

Department of Zoology

Syllabus to be covered in March 2021 for B. Sc. III Semester

Name of Faculty: Prof. P. P. Naik

1. Physiology of Urine formation in Man.
2. Ornithine cycle.

Name of Faculty: Dr. P. A. Deshpande

1. Fat soluble vitamins (A, D, E and K).

Name of Faculty: Dr. B. B. Goundadkar

1. Structure of Immunoglobins G (IgG) & Immunization.

Name of Faculty: Prof. D. R. Shimpi

1. Respiratory Pigments.

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Department of Zoology

Syllabus to be covered in March 2021 for B. Sc. V Semester (Paper 1)

Name of Faculty: Prof. A. A. Halgekar

1. Repetition.

Name of Faculty: Dr. P. A. Deshpande

1. Palaeontology: A note on Dinosaurs.

Name of Faculty: Dr. B. B. Goundadkar

1. A brief account of Wallace line.

Name of Faculty: Prof. D. R. Shimpi

1. Ecological Adaptations — Freshwater, Marine and Terrestrial.

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Department of Zoology

Syllabus to be covered in March 2021 for B. Sc. V Semester (Paper 2)

Name of Faculty: Prof. P. P. Naik

1. Linkage and Crossing over - Linkage in Drosophila.

Name of Faculty: Dr. P. A. Deshpande

1. Bioremediation.

Name of Faculty: Dr. B. B. Goundadkar

1. Chi-Square Test.

Name of Faculty: Prof. D. R. Shimpi

1. Wobble hypothesis.

IQAC Co-ordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

SKE Society's

Govindram Seksaria Science College, Belagavi

DEPARTMENT OF CHEMISTRY

File No. : 02 **Details: Teaching Plan** **Faculty: SMD, RTK**

S. No	Particulars
1	Faculty members teaching
2	Monthly Teaching Plan i. 2015 ii. 2016 iii. 2017 iv. 2018 v. 2019 vi. 2020

List of Faculty with designation:

Faculty Members - Teaching

Permanent Staff

Name of Staff	Qualification	Designation
Shri A.K. Samant	M.Sc.	Associate Professor.
Dr. S.M. Deshpande	M.Sc., Ph.D.	Associate Professor and H.O.D.
Shri R.T. Katamble	M.Sc., B. Ed., M.Phil	Assistant Professor.
Dr. S.G. Adoor	M.Sc., Ph.D.	Assistant Professor.
Dr. V.A. Sunagar	M.Sc., Ph.D.	Assistant Professor.
Smt. A.R. Chitnis	M.Sc., KSET	Assistant Professor.

Society Appointment staff for U.G.

Name of staff	Qualification	Designation
Smt. Vinaya S. Chandorkar	M.Sc., B.Ed.	Lecturer
Smt. Charushila V. Balikai	M.Sc., B.Ed., KSET	Lecturer
Shri Ajit P. Birje	M.Sc., B.Ed.	Lecturer
Miss Prajakta M. Gokhale	M.Sc., B.Ed.	Lecturer
Shri. Santosh S. Samaji	M.Sc., KSET	Lecturer
Miss. Chetna S. Bhagoji	M.Sc.,	Lecturer

Society Appointment staff for P.G.

Name of staff	Qualification	Designation
Dr. Tasneem Taj	M. Sc., Ph.D.	Lecturer
Shri. Ranjeet M. Pandit	M. Sc., B. Ed, NET	Lecturer
Shri. Vinayak R. Bellad	M. Sc., KSET	Lecturer

2020-2021

SKE Society's

GOVINRAM SEKSARIA SCIENCE COLLEGE

Chemistry Department

CBCS

MONTHLY TEACHING PLAN

Semester: I **Month: Oct 2020**

Syllabus to be covered:

1) Atomic Structure : RTK

2) Chemical bonding and molecular structure : ARC

3) Fundamentals of organic chemistry & Alkenes : SSS

4) Purification of Organic Compounds & Stereochemistry : CSB

Synopsis of portion to be taught in the chapter during the month
1. Review of Bohr's model of an atom and its limitations, Atomic spectra of Hydrogen
2. **Ionic Bonding:** Ionic bonding, lattice energy, Statement of Born-Landé equation for calculation of lattice energy, Born-Haber cycle and its applications.
3. **Fundamentals of Organic Chemistry:** Physical Effects, Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis.
4. **Purification of organic compounds**: Methods of purification of solids: Crystallization, fractional crystallization and sublimation. Method of purification of liquids: Distillation, fractional distillation, distillation under reduced pressure, steam distillation.

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Department of Chemistry

SKE Society's

GOVINRAM SEKSARIA SCIENCE COLLEGE

Chemistry Department

MONTHLY TEACHING PLAN

NOV

Semester : I **Month : Dec 2020**

Syllabus to be covered: 1) Atomic Structure : RTK

2) Chemical bonding and molecular structure : ARC

3) Fundamentals of organic chemistry & Alkenes : SSS

4) Purification of Organic Compounds & Stereochemistry : CSB

Synopsis of portion to be taught in the chapter during the month
1., Wave-particle ,nature of matter, de-Broglie equation, Heisenberg uncertainty principle, Schrodinger wave equation, Significance of Ψ.
2 polarizing power and polarizability. Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.
3. **Structure, shape and reactivity of organic molecules:** Nucleophiles and electrophiles. Reactive Intermediates: Carbocations, Carbanions and free radicals. Strength of organic acids and bases: Comparative study with emphasis on factors affecting pK values. Aromaticity: Benzenoids and Hückel's rule. **Alkenes:** Methods of preparation of alkenes by (i) dehydration of alcohols (ii) dehydro halogenation. Saytezaff's elimination (Formation of highly substituted alkene, 2-butene), Hofmann orientation (Formation of least substituted alkene, 1-pentene).
4. Chromatography: General principles, types, brief outline of thin layer chromatography, paper chromatography and column chromatography, solvent extraction. Criteria of purity: Melting point and boiling point.

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Department of Chemistry

SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : Jan 2021**

Syllabus to be covered
1) Atomic Structure : RTK
2) Chemical bonding and molecular structure : ARC
3) Fundamentals of organic chemistry & Alkenes : SSS
4) Purification of Organic Compounds & Stereochemistry : CSB

Synopsis of portion to be taught in the chapter during the month
1. Quantum numbers, Shape of orbital's & nodal plane, Rule for filling electrons in orbital's, Aufbua principle, Pauli's exclusion principle, stability of half & completely filled orbital's
2. **Covalent bonding:** *VB Approach:* Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements.
3. **Chemical reactions of alkenes-** Peroxide effect and its mechanism, hydroboration, oxidation, oxy-mercuration–reduction and mechanism, ozonolysis with respect to2-butene and 2-methyl- 2-butene, oxidation with $KMnO_4$.
4. **Stereochemistry:** **Cycloalkanes**: Baeyer's strain theory, calculation of angle strain, Saclise Mohr theory of strain less rings. Chair and boat forms of cyclohexane. Axial and equatorial bonds. **Conformational isomerism**: Basic concept of conformational analysis with reference to ethane and butane. **Geometrical isomerism**: definition, E and Z notation for 2-butene and butenedioic acid, rules for assigning notations.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : Feb 2021**

Syllabus to be covered:
1) Atomic Structure : RTK
2) Chemical bonding and molecular structure : ARC
3) Fundamentals of organic chemistry & Alkenes : SSS
4) Purification of Organic Compounds & Stereochemistry : CSB

Synopsis of portion to be taught in the chapter during the month
1.Electronic configuration of elements, Anomalous electronic configuration
2. MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for *s-s*, *s-p* and *p-p* combinations of atomic orbitals, nonbonding combination of orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of *s-p* mixing) and heteronuclear diatomic molecules such as CO, NO and NO^+. Comparison of VB and MO approaches.
3 **Dienes:** Classification, Nomenclature and Preparation of 1,3 butadiene; Reactions of 1,2 and 1,4 addition reactions (addition of halogens and halogen acids), Diel's Alder reaction, polymerization of 1,3 butadiene. **Alkynes:** Acidity of Alkynes, reactions of acetylene –metal ammonia reduction, oxidation and polymerization
4. Determination of configuration of butenedioic acid by anhydride formation, dipole moment measurement, melting point and stability. **Optical isomerism**: Chirality, van't Hoff-Lebel hypothesis, optical activity, D and L configurations, R and S notations, sequence and priority rules, enantiomers, diastereoisomers, epimers, anomers, racemic and meso (with suitable examples like lactic and tartaric acids.), racemisation, resolution of racemic mixture by chemical method, asymmetric synthesis, Walden inversion.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : Oct 2020**

Syllabus to be covered:
1) Metallurgy : ARC
2) Colligative properties, Acids and Bases & IR Spectroscopy : CVB
3) Second law of Thermodynamics : SGA
4) Orientation & Alcohols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Review of steps involved in metallurgical process, thermodynamic concepts of selection of reducing agents using Ellingham diagrams.
2 Raoult's law, concept of lowering of vapour pressure, elevation of boiling point .
3 Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and bases.
4. Review of inductive, electromeric, resonance and hyperconjugation effects, activating and deactivating groups.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : Nov 2020**

Syllabus to be covered: 1) Metallurgy : ARC

2) Colligative properties, Acids and Bases & IR Spectroscopy : CVB

3) Second law of Thermodynamics : SGA

4) Orientation & Alcohols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide.
2 Depression in freezing point and osmotic pressure, derivation of Kb and Kf by thermodynamic treatment, experimental determination of molecular weight by -Landsberger's method, Beckmann's method, Berkely and Hartley method
3 Hard and soft acids and bases(HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept, IR spectroscopy: Principle, types of vibrations,
4.Orientation of substituent in aromatic compounds with different functional groups like –OH, -NH2, -Cl, -NO2, -CH3, and -COOH in halogenation and nitration reactions (only electronic interpretation) Alcohols :Introduction and nomenclature of dihydric and trihydric alcohols, preparation of glycol from ethene.

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : Dec 2020**

Syllabus to be covered 1) Metallurgy : ARC

2) Colligative properties, Acids and Bases & IR Spectroscopy : CVB

3) Second law of Thermodynamics : SGA

4) Orientation & Alcohols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide. Powder metallurgy - Production of tungsten powder from wolframite.
2 Colligative properties : Numerical problems Statement, cyclic process, Carnot's cycle, heat engine and its efficiently, Carnot's theorem, entropy and its significance.
3 identification of following organic compounds by stretching frequencies–Alkanes, alkenes, alkynes, benzene, aldehydes, ketone, alcohol, thiols, acids, esters, amines, problems based on molecular formula and stretching frequency.
4. oxidative cleavage of ethylene glycol with lead tetra acetate and per iodic acid, pinacol–pinacolone rearrangement, preparation of glycerol from propene, synthesis and uses of nitroglycerine, composition and uses of dynamite and cordite, distinction between primary, secondary and tertiary alcohols by Lucas reagent.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : Jan 2021**

Syllabus to be covered :

1) Solvents : ARC
2) Second law of thermodynamics :SGA
3) Phenols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Types, properties of good solvents, non-aqueous solvents - Liquid NH3 and liquid HF, (properties like solvation, acid-base, redox, complex formation and precipitation), water as universal solvent, leveling effect.
2. Carnot's theorem, entropy and its significance, entropy changes in reversible and irreversible process for ideas gases, free energy, dependence of free energy on pressure and temperature.
3. Phenols :Classification and nomenclature, acidic character of phenol compared to alcohol and cyclohexenol, mechanism of Fries rearrangement, Claisen rearrangement, Elbs persulphate oxidation and Lederer-Manasse reaction, synthesis and uses of n-hexyl resorcinol and picric acid, structure and uses of dettol.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : Feb 2021**

Syllabus to be covered:

1) 2nd law of thermodynamics : SMD
2) Organometallic compounds: VAS

Synopsis of portion to be taught in the chapter during the month
1. Gibb's–Helmholtz equation, Clausius-Clapeyron equation and its applications, problems on above, partial molal quantities, chemical potential of on ideal gas
2 .Synthesis of methyl magnesium iodide and its synthetic applications in the preparation of alcohols(primary, secondary and tertiary) aldehyde, ketone, ester, carboxylic acid, amines and alkanes. Organo-lithium compounds: Preparation of Lithium dialkylcuprate and synthesis of higher alkane from it.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month Sept 2020**

Syllabus to be covered:
1) Coordination Chemistry I : AKS
2) Theory of gravimetric analysis : CVB
3) Green Chemistry : APB
4) Microwave Spectroscopy : VSC
5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- double salts, complex salts, central metal ion, ligand, types of ligands.
2.Principles of gravimetric analysis- super saturation, von Weimar equation, conditions of precipitation, co precipitation and post precipitation.
3.The need for green chemistry and eco-efficiency, green methods, green products.
4.Classification of molecules, rotational spectra of rigid diatomic molecules.
5.Terminology and explanation of the terms involved .applications of phase rule

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Oct 2020**

Syllabus to be covered: 1) Coordination Chemistry I : AKS

2) Theory of gravimetric analysis : CVB

3) Green Chemistry & Heterocyclic Chem : PMG

4) Microwave Spectroscopy : VSC

5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1. complex ion and coordination number. IUPAC nomenclature Valence bond theory of coordination compounds with reference to $[Fe(CN)_6]^{3-}$, $[Fe(CN)_6]^{4-}$, $[FeF_6]^{3-}$, $[Zn(NH_3)_4]^{2+}$, $[Ni(CN)_4]^{2-}$ and its limitations.
2. Separation of precipitate from mother liquor, washing, properties of wash liquid, drying and ignition of precipitate, weighing form.
3. 12 principles of green chemistry. Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.
5. One component system-water and sulphur systems Two-component systems-Bismuth-Cadmium system and KI – water system. Eutectic and freezing mixture.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Nov 2020**

Syllabus to be covered:
1) Coordination Chem and inorganic polymers : AKS
2) Alkaloids : CVB
3) Green Chemistry & Heterocyclic Chem : PMG
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
Isomerism- Ionisation, hydrate, linkage, geometrical and optical in coordination compounds with respect to coordination number 4 and 6. Inorganic polymers, Types, comparison with organic polymers, silicones.
2. Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example.
3. synthesis of the following compounds. i) Furan, thiohene and pyrrole from 1,4- diketones. ii) Pyridine by Hantzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyndine(chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole..
4. Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule(final equations only).

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Dec 2020**

Syllabus to be covered:

1) Inorganic polymers : AKS
2) Alkaloids : CVB
3) Heterocyclic Chem : PMG
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1.phosphonitrilic halides- formation, structure and applications.
2. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine.
3. Acidity of α-hydrogens, synthesis of ethylacetoacetate(EAA) by Claisen condensation and its mechanism, synthesis of diethyl malonate, keto-enol tautomerism of EAA
4. selection rules, zero point energy determination of force constant and qualitative relation between force constant and bond dissociation energies. Vibrational degrees of freedom of molecules(Linear and non linear).

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Jan 2021**

Syllabus to be covered: 1) Organic synthesis via enolates : PMG
2) Microwave Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1.Synthesis of following compounds using EAA and diethyl malonate i) ketones ii) carboxylic acids iii) heterocyclic compounds iv) dicarboxylic acids.
2 criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Sept 2020**

Syllabus to be covered:

1) Industrial Chemistry-I : RTK
2) Reagents and Reactions : APB
3) Chemical equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1 **Alloys**-Significance, types of alloys (ferrous and non ferrous alloys), preparation (fusion and electro-deposition) and their applications.
2. Preparation, mechanism of action and applications - DCC(Amide formation).
3. Thermodynamic treatment of law of mass action.
4 Adsorption, derivation of Frendlich and Langmuir's adsorption isotherms

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Oct- 2020**

Syllabus to be covered:

1) Industrial Chemistry-I : RTK
2) Reagents and Reactions : APB
3) Chemical equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1. preparation (fusion and electro-deposition) and their applications. **Abrasives-** Classification. Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.
2.), LiAlH4(reduction of aldehyde, carboxylic acid and ester), DDQ(Benzylic oxidation of tetralin, aromatisation of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols), NBS(allylic bromination)
3 van't Hoff reaction isotherm, relationship between Kp, Kc and Kx, variation of Kp and Kc with temperature and pressure.
4 Forms of Langmuir's adsorption isotherms at high and low pressure regions, BET equation (No derivation), determination of surface area using BET equation.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Nov -2020**

Syllabus to be covered:

1) Industrial Chemistry-I : RTK
2) Reagents and Reactions : APB
3) Kinetics of chain reactions : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1 Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, Annealing of glass, types, composition and uses of glasses.
2.OsO4(hydroxylation of alkenes). PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols Classification, requirement of a dye, colour and constitution. The synthesis of each of the followimg class of dyes- Azo dyes -Congo red
3. Examples of chain reactions, general aspects of chain reactions,
4 determination of surface area using BET equation Catalysis– Theories of catalysis-intermediate and adsorption theory

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Dec 2020**

Syllabus to be covered:
1) Industrial Chemistry-II : RTK
2) Dyes : PMG
3) Kinetics of chain reactions & Mass Spectroscopy :SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1.Cement - Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting. Pigments - Manufacture and relative merits of white lead
2.Vat dyes-Indigo,Anthraquinone dyes-Alizarin Triphenylemethane dyes-Malachite green, Crystal violet ,Phthalein dyes-Fluorescein,Eosin; Synthesis of each dyes
3. length, chain transfer reactions, chain inhibition, kinetics of branching chain reactions. Principle, instrumentation, definitions of parent peak and base peak,
4. Enzyme catalysis-Michaelis–Menten equation, industrial applications of catalysis.

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Jan 2021**

Syllabus to be covered: 1) Industrial Chemistry-II : RTK

2) Mass Spectroscopy :SGA

Synopsis of portion to be taught in the chapter during the month
1. Lithopone, Titanium white, constituents of paints and varnishes.
2. McLafferty rearrangement with respect to butyraldehyde.

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2019-2020

SKE Society's
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Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : June 2019**

Syllabus to be covered :
1) Atomic Structure and periodic trends : RTK
2) Method of analysis : ARC
3) Purification of Organic compounds : SSS
4) Solutions : VSC

Synopsis of portion to be taught in the chapter during the month
1. Postulates of Bohrs theory, calculation of radius and energy of nth orbital. Quantum numbers Significance, Principles. Sommer field model, de-Broglie hypothesis.
2. Errors in quantitative analysis, classification and minimization, accuracy, precision, standard deviation, t-test, significant figure and rules for computations.
3. Purification of organic compounds Methods of purification of solids: Crystallization, fractional crystallization and sublimation. Chromatography- Principle.
4. Solution of gas in liquid – Henry's law and limitations. Completely miscible liquid pairs. Azeotropes.

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : July 2019**

Syllabus to be covered :
1) Atomic Structure and Chemical bonding- I : RTK
2) Principles of volumetric analysis : ARC
3)Chromatography & Stereochemistry of organic compound : SSS
4) Solutions & Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Experimental verification-Davisson-Germer experiment, Aufbau principle, Hund's rule, (n+l) rule, Pauli's exclusion principle. Ionic bonding: factors affecting the formation of ionic bonding, Lattice energy and its determination by Born-Haber cycle.
2 Concentration terms, normality, molarity, mole fraction, percentage, primary standard solution, titration-acid-base, precipitation, iodometric, redox and complexometric (with reference to EDTA) titrations, choice of indicators in the above titrations.
3. Chromatography: TLC, PC, CC, Solvent extraction. Mp and BP determination. Baeyer's strain theory, calculation of angle strain, Sachse Mohr theory of strainless rings. Chair and boat forms of cyclohexane. Axial and equatorial bonds.Basic concept of conformational analysis with reference to ethane and butane.
4. Solution of gas in liquid – Theory of azeotropic mixtures, partially miscible liquid systems, critical solution temperature with respect to phenol water, triethyl amine-water and nicotine- water system. Real gas isotherms, Andrew's experiment of CO2, PV-relationship, critical phenomenon of gases.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : August 2019**

Syllabus to be covered :

1) Chemical bonding- I & Salt hydrolysis	RTK
2) Spectroscopy	: ARC
3) Stereochemistry of organic compound	: SSS
4) Gaseous State	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Covalent bond: Types, factors favouring covalent bond, properties of covalent compounds. Valence bond theory with respect to H2, F2, HCl molecules and its limitations. Types of salts, definition of degree of hydrolysis and hydrolysis constant derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak base and strong acid.
2. Introduction to conventional methods of elucidation of structure of organic compounds (chemical degradation) and comparison with spectroscopic methods, electromagnetic spectrum.
3. Geometrical isomerism: definition, E and Z notation for 2-butene and butenedioic acid, rules for assigning notations. Determination of configuration of butenedioic acid by anhydride formation, dipole moment measurement, melting point and stability.
4. critical phenomenon of gases. Critical constants(Pc, Vc, Tc) – Definition, of critical temperature, critical pressure &critical volume. Relationship between critical constants and Vanderwaals constants, experimental determination of critical constants, reduced equation of state and statement of law of corresponding states.

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester : I **Month : September 2019**

Syllabus to be covered :
1) Salt hydrolysis & Nernst distribution law RTK
2) Spectroscopy : ARC
3) Stereochemistry of organic compound : SSS
4) Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak acid and strong base. Numerical problems. Statement and limitations, applications of Nernst distribution law in solvent Extraction
2. UV spectroscopy: Principle, types of transitions, chromophores, concept of auxochromes and their effect on λmax, bathochromic shift, hypsochromic shift, hypochromic and hyperchromic shift.
3 Optical isomerism: Chirality, van't Hoff-Lebel hypothesis, optical activity, D and l. configurations, R and S notations, sequence and priority rules, enantiomers, distereoisomers, epimers, anomers, racemic and meso (with suitable examples like lactic and tartaric acids.), racemisation.
4. Liquification of gases(Linde's method only). Maxwell's law of distribution of molecular velocities(No derivation).

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MONTHLY TEACHING PLAN

Semester : I **Month : Oct 2019**

Syllabus to be covered :
1) Spectroscopy : ARC
2) Stereochemistry of organic compound : SSS
3) Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. UV spectroscopy: Woodward and Fieser rules and illustration of calculation of λmax taking myrcene and B-phelladrene as examples.
2. Optical isomerism: Resolution of racemic mixture by chemical method, asymmetric synthesis, Walden inversion.
3. Effect temperature on distribution of molecular velocities.

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MONTHLY TEACHING PLAN

Semester : II **Month : Dec 2020**

Syllabus to be covered :

1) **Chemical bonding-II**	: RTK
2) Thermochemistry	: ARC
3)Alkenes	: SSS
4) Aromatic Hydrocarbons	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2. Kirchoff's equation, bond energies and bond dissociation energies, calculation of bond energy and bond dissociation energies by taking simple molecules. Numerical problems.
3. Alkenes: Methods of preparation of alkenes by (i) dehydration of alcohols (ii) dehydro halogenation. Saytezaff's elimination (Formation of highly substituted alkene, 2-butene), Hofmann orientation (Formation of least substituted alkene, 1-pentene).
4. Resonance in benzene, Aromaticity–Huckel's 4n +2 rule with respect to benzene, furan, pyridine and [10] annulene.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : II **Month : January 2020**

Syllabus to be covered :

1) Chemical bonding-II	: RTK
2) Thermodynamics	: ARC
3)Alkenes	: SSS
4) Aromatic Hydrocarbons	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2 Statement, isothermal and adiabatic process, expression for work done in the reversible expansion of adiabatic expansion of an ideal gas (PVγ=Constant) Joule-Thomson effect, Joule-Thomson experiment.
3. Alkenes: Chemical reactions of alkenes- Peroxide effect and its mechanism, hydroboration,oxidation, oxy-mercuration–reduction and mechanism, ozonolysis with respect to 2-butene and 2-methyl-2-butene, oxidation with KMnO4.
4. Mechanism of electrophilic aromatic substitution- halogenation, nitration, sulphonation and Friedel-Craft's reaction (evidences for two step mechanism and evidences for formation of electrophile).

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : II **Month : Feb 2020**

Syllabus to be covered :
1) Chemical bonding-II :RTK
2) First law of thermodynamics & Liquid state : ARC
3) Dienes : SSS
4) Aromatic Hydrocarbons : VSC

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hydrogen bonding: Types, significance of hydrogen bonding, properties explained by hydrogen bonding like a)State of H2O and H2S b) Melting and Boiling point c) Ice has less density than water.
2 derivation of Joule Thomson coefficient for an ideal gas and inversion temperature. Liquid State: Introduction, Definition and Types and application
3. Dienes: Classification and Nomenclature Preparation of 1,3 butadiene; 1,2 and 1,4 addition reactions (addition of halogens and halogen acids), Diel's-Alder reaction, polymerization of 1,3 butadiene.
4. Classification, examples, constitution of naphthalene, Haworth synthesis, nitration and sulphonation of naphthalene.

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MONTHLY TEACHING PLAN

Semester : II **Month : March 2020**

Syllabus to be covered :

1) Solids	: RTK
2) Liquid state	: ARC
3) Alkynes and Collides	: SSS
4) Conversions	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Space lattice, unit cell, crystal systems, calculation of particles per unit cell, laws of crystallography, x-ray diffraction of crystals, derivation of Brag's equation, Miller indices.
2 Surface Tension: Effect of temperature on surface tension. Determination of surface tension of liquid by drop numbers method, parachor and its application. Viscosity: Effect of temperature on viscosity, determination of relative, absolute and intrinsic viscosity of liquids by ostwald's viscometer method.
3 Alkynes: Acidity of Alkynes, reactions of acetylene –metal ammonia reduction, oxidation and polymerization Colloids : Emulsions: Types of emulsions, Preparation and emulsifiers.
4 Conversions 1) Alkanes to alkyhalides to alcohols and vice versa 2) Alkanes to alkyl cyanides to carboxylic acids 3) Benzene to p-nitrobenzoic acid 4) Benzene to m-bromoaniline 5) Naphthalene to 1,4–naphthaquinone 6) Naphthalene to anthranilic acid

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MONTHLY TEACHING PLAN

Semester : III **Month : JUNE 2019**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	:SMD
3) Acids and Bases	: CSB
4) Orientation	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Review of steps involved in metallurgical process, thermodynamic concepts of selection of reducing agents using Ellingham diagrams.
2 Raoult's law, concept of lowering of vapour pressure, elevation of boiling point .
3 Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and bases.
4. Review of inductive, electromeric, resonance and hyperconjugation effects, activating and deactivating groups.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : III **Month : JULY 2019**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	: SMD
3) Acids and Bases & IR Spetroscopy	: CSB
4) Orientation & Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide.
2 Depression in freezing point and osmotic pressure, derivation of Kb and Kf by thermodynamic treatment, experimental determination of molecular weight by –Landsberger's method, Beckmann's method, Berkely and Hartley method
3 Hard and soft acids and bases(HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept, IR spectroscopy: Principle, types of vibrations,
4.Orientation of substituent in aromatic compounds with different functional groups like –OH, -NH2, Cl, NO2, CH3, and -COOH in halogenation and nitration reactions (only electronic interpretation) Alcohols :Introduction and nomenclature of dihydric and trihydric alcohols, preparation of glycol from ethene,

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MONTHLY TEACHING PLAN

Semester : III **Month : August 2019**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties & second law of thermodynamics	:SMD
3) IR Spetroscopy	:CSB
4) Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide. Powder metallurgy - Production of tungsten powder from wolframite.
2 Colligative properties : Numerical problems Statement, cyclic process, Carnot's cycle, heat engine and its efficiently, Carnot's theorem, entropy and its significance.
3 identification of following organic compounds by stretching frequencies–Alkanes, alkenes, alkynes, benzene, aldehydes, ketone, alcohol, thiols, acids, esters, amines, problems based on molecular formula and stretching frequency.
4. oxidative cleavage of ethylene glycol with lead tetra acetate and per iodic acid, pinacol–pinacolone rearrangement, preparation of glycerol from propene, synthesis and uses of nitroglycerine, composition and uses of dynamite and cordite, distinction between primary, secondary and tertiary alcohols by Lucas reagent.

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MONTHLY TEACHING PLAN

Semester : III **Month : Sept 2019**

Syllabus to be covered : 1) Solvents : ARC

2) Second law of thermodynamics :SMD

3) Phenols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Types, properties of good solvents, non-aqueous solvents - Liquid NH3 and liquid HF, (properties like solvation, acid-base, redox, complex formation and precipitation), water as universal solvent, leveling effect.
2. Carnot's theorem, entropy and its significance, entropy changes in reversible and irreversible process for ideas gases, free energy, dependence of free energy on pressure and temperature.
3. Phenols :Classification and nomenclature, acidic character of phenol compared to alcohol and cyclohexenol, mechanism of Fries rearrangement, Claisen rearrangement, Elbs persulphate oxidation and Lederer-Manasse reaction, synthesis and uses of n-hexyl resorcinol and picric acid, structure and uses of dettol.

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MONTHLY TEACHING PLAN

Semester : III **Month : Oct 2019**

Syllabus to be covered :

1) 2nd law of thermodynamics :SMD
2) Organometallic compounds: VAS

Synopsis of portion to be taught in the chapter during the month
1. Gibb's–Helmholtz equation, Clausius-Clapeyron equation and its applications, problems on above, partial molal quantities, chemical potential of on ideal gas
2 .Synthesis of methyl magnesium iodide and its synthetic applications in the preparation of alcohols(primary, secondary and tertiary) aldehyde, ketone, ester, carboxylic acid, amines and alkanes. Organo-lithium compounds: Preparation of Lithium dialkylcuprate and synthesis of higher alkane from it.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Dec 2019**

Syllabus to be covered:
1) Environmental Chemistry :ARC
2) Bio-inorganic Chemistry :SMD
3) d & f block elements :CSB
4) Carboxylic acids :VAS

Synopsis of portion to be taught in the chapter during the month
1. : Types of pollutants, sources.,
2 Essential and trace elements in biological process.
3 General characteristics of d block elements- Electronic configuration, oxidation states
4 Nomenclature, structure and bonding, acid strengths of mono, di and trichloroacetic Acids

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MONTHLY TEACHING PLAN

Semester: IV **Month: Jan 2020**

Syllabus to be covered:
1) Environmental Chemistry : ARC
2) Bio-inorganic Chemistry & Electrochemistry : SMD
3) d & f block elements : CSB
4) Carboxylic acids : VAS

Synopsis of portion to be taught in the chapter during the month
1 Control measures- CO, CO2, SOx, NOx, H2S, hydrocarbons, CFC's and particulates, pesticides, and their adverse effects. Water pollution: Types of pollutants, sources and adverse effects (sewage,infectious agents).
2 Metalloporphyrins with respect to haemoglobin and chlorophyll(structure and function), biological role of Na, K, Fe and Zn. Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes.
3.Metallic property, colour, reactivity, reducing property, magnetic, catalytic and complex formation properties. General characteristics of f block elements - Electronic configuration, cause and consequences of lanthanide contraction. General features of actinides- electronic configuration, oxidation state, extraction of uranium from pitchblende.
4 Acid strengths of nitro, chloro and hydroxy substituted benzoic acids, mechanism of esterification and hydrolysis of ester (Aac2 and Bac2). Reactions of carboxylic acids - i) Conversion into acid derivatives(acid chlorides, amides, esters and anhydrides), ii) Curtius rearrangement, iii) Reaction with organometallic compounds and iv) Hell-Volhard-Zelinsky reaction.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Feb 2020**

Syllabus to be covered:

1) Environmental Chemistry : ARC
2) Electrochemistry : SMD
3) Chemical Kinetics : CSB
4) Aromatic amines : VAS

Synopsis of portion to be taught in the chapter during the month
1.Organic chemicals and inorganic mineral, oils and sediments) Parameters of water pollution – Dissolved oxygen(DO), biological oxygen demand(BOD) and chemical oxygen demand(COD), definitions and their determinations. Treatment of sewage and industrial effluents - Preliminary, primary and secondary treatment(Aerated lagoons, trickling filters and activated sludge)
2 Debye-Huckel's theory. Debye–Huckel equation for strong electrolytes..Applications of conductance measurements Determination of solubility product of sparingly soluble salts
3 Second order reaction with examples, derivation of rate constant equation of second order reaction when concentration of the reactions are equal(a=b), half life period, determination of order of reaction by a) Differential equation method b) Half life method
4. Classification, distinction between primary, secondary and tertiary amines by nitrous acid test, comparison of basic character of methyl amine, aniline and cyclohexylamine, amine salts as phase transfer catalysts, mechanism of Hoffmann rearrangement, Grabiel phthalimide reaction, diazotisation

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MONTHLY TEACHING PLAN

Semester: IV **Month: March 2020**

Syllabus to be covered:
1) Aldehydes and Ketones : ARC
2) Electrochemistry : SMD
3) Chemical Kinetics : CSB
4) Aromatic amines & Ethers : VAS

Synopsis of portion to be taught in the chapter during the month
1. Aldehydes and Ketones: Nomenclature, structure and Bonding, mechanism of nucleophillic addition reactions-Hydrogen cyanide, hydroxyl amine, acetal formation–with ethanol and ethylene glycol. Mechanism of the following reactions 1) Aldol condensation 2) Cannizzarro's reaction 3) Claisen-Schmidt reaction
2. Conductometric titrations - types of acid - base titrations and precipitation titrations c) Determination of degree of dissociation of weak electrolytes Ionic mobility.
3. Simple collision theory of reaction rates: Derivation of rate constants of unimolecular (Lindemann hypothesis) and bimolecular reaction rates, limitation of collision theory. Transition state theory, Comparison of transition state theory and collision theory, steric factor.
4. Synthetic applications of diazonium salts-reduction, Sandmeyer's reaction, coupling reactions. Nomenclature of ethers and their methods of preparation, chemical reactions - Reaction with HI, hot and cold taking symmetric and unsymmetrical ethers. Crown ethers: Definition, examples, use of crown ethers as phase transfer catalysts.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month June 2019**

Syllabus to be covered: 1) Coordination Chemistry I : AKS

2) Theory of gravimetric analysis : CVB

3) Green Chemistry : PMG

4) Microwave Spectroscopy : VSC

5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- double salts, complex salts, central metal ion, ligand, types of ligands,
2.Principles of gravimetric analysis- super saturation, von Weimar equation, conditions of precipitation, co precipitation and post precipitation.
3.The need for green chemistry and eco-efficiency, green methods, green products.
4.Classification of molecules, rotational spectra of rigid diatomic molecules.
5.Terminology and explanation of the terms involved .applications of phase rule

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: July 2019**

Syllabus to be covered: 1) Coordination Chemistry I : AKS

2) Theory of gravimetric analysis : CVB

3) Green Chemistry & Heterocyclic Chem : PMG

4) Microwave Spectroscopy : VSC

5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1. complex ion and coordination number. IUPAC nomenclature Valence bond theory of coordination compounds with reference to [Fe(CN)6]3-, [Fe(CN)6]4-, [FeF6]3-, [Zn(NH3)4]2+, [Ni(CN)4]2- and its limitations.
2. Separation of precipitate from mother liquor, washing, properties of wash liquid, drying and ignition of precipitate, weighing form.
3. 12 principles of green chemistry. Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.
5. One component system-water and sulphur systems Two-component systems-Bismuth-Cadmium system and KI – water system.Eutectic and freezing mixture.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: August 2019**

Syllabus to be covered:
1) Coordination Chem and inorganic polymers : AKS
2) Alkaloids : CVB
3) Green Chemistry & Heterocyclic Chem : PMG
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
Isomerism- Ionisation, hydrate, linkage, geometrical and optical in coordination compounds with respect to coordination number 4 and 6. Inorganic polymers, Types, comparison with organic polymers, silicones.
2. Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example.
3. synthesis of the following compounds. i) Furan, thiohene and pyrrole from 1,4- diketones. ii) Pyridine by Hantzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyridine(chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole.
4. Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule(final equations only),

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Sept 2019**

Syllabus to be covered:

1) Inorganic polymers : AKS
2) Alkaloids : CVB
3) Heterocyclic Chem : PMG
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1.phosphonitrilic halides- formation, structure and applications.
2. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine.
3. Acidity of α-hydrogens, synthesis of ethylacetoacetate(EAA) by Claisen condensation and its mechanism, synthesis of diethyl malonate, keto-enol tautomerism of EAA
4. selection rules, zero point energy determination of force constant and qualitative relation between force constant and bond dissociation energies. Vibrational degrees of freedom of molecules(Linear and non linear).

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Oct 2019**

Syllabus to be covered: 1) Organic synthesis via enolates : PMG

2) Microwave Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1Synthesis of following compounds using EAA and diethyl malonate i) ketones ii) carboxylic acids iii) heterocyclic compounds iv) dicarboxylic acids.
2 Classification of molecules, rotational spectra of rigid diatomic molecules, criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: June-2019**

Syllabus to be covered:
1) Industrial Chemistry-I : RTK
2) Reagents and Reactions : APB
3) Chemical equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1 **Alloys**-Significance, types of alloys (ferrous and non ferrous alloys), preparation (fusion and electro-deposition) and their applications.
2. Preparation, mechanism of action and applications - DCC(Amide formation).
3. Thermodynamic treatment of law of mass action.
4 Adsorption, derivation of Freudlich and Langmuir's adsorption isotherms

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: July- 2019**

Syllabus to be covered:

1) Industrial Chemistry-I	: RTK
2) Reagents and Reactions	: APB
3) Chemical equilibrium	: SGA
4) Surface Chemistry	: SMD

Synopsis of portion to be taught in the chapter during the month
1. preparation (fusion and electro-deposition) and their applications. **Abrasives-** Classification, Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.
2.), LiAlH4(reduction of aldehyde, carboxylic acid and ester), DDQ(Benzylic oxidation of tetralin, aromatisation of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols), NBS(allylic bromination)
3 van't Hoff reaction isotherm, relationship between Kp, Kc and Kx, variation of Kp and Kc with temperature and pressure.
4 Forms of Langmuir's adsorption isotherms at high and low pressure regions, BET equation (No derivation), determination of surface area using BET equation.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: August-2019**

Syllabus to be covered:

1) Industrial Chemistry-I : RTK
2) Reagents and Reactions : APB
3) Kinetics of chain reactions : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1 Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, Annealing of glass, types, composition and uses of glasses.
2 OsO4(hydroxylation of alkenes), PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols Classification, requirement of a dye, colour and constitution. The synthesis of each of the following class of dyes- Azo dyes -Congo red
3. Examples of chain reactions, general aspects of chain reactions,
4 determination of surface area using BET equation Catalysis– Theories of catalysis-intermediate and adsorption theory

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Sept 2019**

Syllabus to be covered:
1) Industrial Chemistry-II : RTK
2) Dyes : APB
3) Kinetics of chain reactions & Mass Spectroscopy :SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1.Cement - Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting. Pigments - Manufacture and relative merits of white lead
2.Vat dyes–Indigo,Anthraquinone dyes–Alizarin Triphenylemethane dyes–Malachite green, Crystal violet ,Phthalein dyes-Fluorescein,Eosin; Synthesis of each dyes
3. length, chain transfer reactions, chain inhibition, kinetics of branching chain reactions. Principle, instrumentation, definitions of parent peak and base peak.
4. Enzyme catalysis-Michaelis–Menten equation, industrial applications of catalysis.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Oct 2019**

Syllabus to be covered: 1) Industrial Chemistry-II : RTK

2) Mass Spectroscopy SGA:

Synopsis of portion to be taught in the chapter during the month
1. Lithopone, Titanium white, constituents of paints and varnishes.
2. McLafferty rearrangement with respect to butyraldehyde.

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Semester: VI (Paper-I) **Month: Dec 2019**

Syllabus to be covered:

1) Coordination compounds –II : AKS
2) Metal-ligand Equilibria : CVB
3) Electronic Spectrum :VSC
4) Quantum Chemistry : SMD
5) Carbohydrates : PMG

Synopsis of portion to be taught in the chapter during the month
1.Crystal field theory(CFT) with reference to octahedral, distorted octahedral(Jahn- Tellar distortion), tetrahedral and square planar complexes, calculation of crystal field stabilization energy
2.Stability constant, stepwise and overall formation constants, trends in step wise constants, factors affecting the stability of the metal complexes with reference to the nature of metal ion and ligand.
3.Concept potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules, energy levels and respective transitions
4. Photoelectric effect - Einstein's photoelectric equation, wave particle duality, de- Broglie hypothesis, de-Broglie equation
5. Haworth and conformational formulae of glucose and fructose, mutarotation and its mechanism, osazone formation, Killani's synthesis, Ruff's degradation

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Jan 2020**

Syllabus to be covered:

1) Coordination compounds –II : AKS
2) Metal-ligand Equilibria : CVB
3) Electronic Spectrum, Physical properties molecular structure : VSC
4) Quantum Chemistry : SMD
5) Carbohydrates : PMG

Synopsis of portion to be taught in the chapter during the month
1. , factors affecting 10Dq, consequences of crystal field splitting on ionic radii of M+2 ions, enthalpy of hydration of M+2 ions, explanation of colour and magnetic properties of magnetic complexes, limitations of crystal field theory, calculation of magnetic moment using Gouy's method,
2. Chelates - definition, characteristics, factors influencing the stability of metal chelates and importance of chelates
3. Frank–Condon principle Introduction-dipole moment, induced dipole moment, measurement of dipole moment by temperature variation method and its applications.
4. de-Broglie equation(derivation), experimental verification-Davisson-Germer experiment.
5. epimers and epimerisation with respect to monosaccharides, interconversions of glucose and fructose.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Feb 2020**

Syllabus to be covered:

1) Terpinoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins and Harmones : PMG
4) Polymers : VSC

Synopsis of portion to be taught in the chapter during the month
1. Introduction, classification of terpenes, Ingold's isoprene rule, constitution of citral with synthesis
2 Introduction, classification of organotransition metal complexes, 18 electron rule with respect to $[Fe(CO)_5]$, $[Ni(CO)_5]$, $[Mn(CO)_5]_2$
3. Vitamins: Classification and importance of vitamin-A, B6, B12, C, D and E.
4. Introduction, classification, determination of molar masses of macromolecules by viscometry and Donnan membrane equilibrium.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: March 2020**

Syllabus to be covered:
1) Terpinoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins and Hormones : PMG

Synopsis of portion to be taught in the chapter during the month
1. synthesis of α and β ionones, synthesis of α-terpeniol.
2. ferrocene, structure and bonding in metal olefins (Zeise's Salt).
3. Synthesis of Vitamin-C from D(+)-glucose, synthesis of vitamin-A by Vandrop etal.

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Semester: VI (Paper-II) **Month: Dec 2020**

Syllabus to be covered:
1) Electro motive force : SGA
2) Soil Analysis : SMD
3) Chromatography :RTK
4) Chemotherapy :APB

Synopsis of portion to be taught in the chapter during the month
1. Reversible and irreversible cells, EMF of a chemical cell and its measurement by potentiometer, standard cell (Weston standard cell).
2. Macro nutrients, trace metals and organic matter in soil.
3. Principle, types, stationary and mobile phases, physical factors of separation, brief account of paper chromatography, calculation of Rf value, brief account of column chromatography and its applications.
4. Introduction, requirement of an ideal synthetic drug, classification, synthesis and uses of the following-Antipyretics antipyrine, paracetamol Anaesthetics-novacaine(local) and pentothal sodium(general)Antihistumines–chlorpheniramine maleate(CPM)

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Department of Chemistry

SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Chemistry Department

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month: Jan 2020**

Syllabus to be covered:
1) **Electro motive force** : SGA
2) Soil Analysis : SMD
3) Chromatography :RTK
4) Chemotherapy :APB

Synopsis of portion to be taught in the chapter during the month
1. Types of electrodes - Reference electrode, calomel electrode, derivation of Nernst equation for emf of a cell
2. Determination of pH, Determination of nitrogen by alkaline permanganate method and phosphorus by Bray's and Olsen's method present in the soil.
3. Flame photometry: Principle, Limitations, Instrumentation, Flame photometric determination of Na and K.
4. Antimalarials–paludrine, chloroquine Antibiotics-chloromycetin, penicillin, tetracycline Para pharmaceutical reagents–Benedict's reagent, sodium citrate, Barfoed reagent

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month: Feb 2020**

Syllabus to be covered:

1) Electro motive force	: SGA
2) Photochemistry	:SMD
3) Chromatography	:RTK
4) Soaps and detergents	:APB
5) Electronic spectra of transition metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1 concentration cells- with and without transference, liquid junction potential and its derivation, salt bridge. Applications of emf measurements- 1) Determination of pH: Using hydrogen electrode, quinhydrone electrode and glass electrode. 2) Potentiometric titrations: Acid-base and redox titration.
2. Photochemical reactions, laws of photochemistry – Beer's law, Lambart's Law, Beer- Lambart's Law.
3. Thermogravimetry: Principle and applications of thermogravimetric methods (TG and DTA).
4. Soaps - Introduction, manufacture by modern process, cleaning action of soap. Detergents - anionic, cationic, nonionic, with suitable examples, distinction between soaps and detergents, emulsifiers, stabilisers and builders.
5. Russel-Sandar's coupling in defining ground states of spectrochemical series.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month: March 2020**

Syllabus to be covered:
1) **Reaction Mechanism** : CVB
2) Photochemistry :SMD
3) Chromatography :RTK
4) NMR :APB
5) Electronic spectra of transition metal complex :AKS

Synopsis of portion to be taught in the chapter during the month
1. a) Beckmann rearrangement b) Favorskii rearrangement
2. Grothus-Draper Law and Einstein's Law of photochemical equivalence, quantum efficiency or yield, reasons for high and low quantum efficiencies with examples, fluorescence, phosphorescence, photosensitization and chemiluminescence.
3. Electrogravimetry: Principle, Instrumentation, Electrogravimetric determination of Copper.
4. Principle of Proton Magnetic Resonance(1H NMR) spectroscopy, nmr spectrum, chemical shift, nuclear shielding and deshielding, spin-spin coupling(n+1) rule, intensity(height) of the signal, TMS as internal standard-advantages, interpretation of PMR spectra of simple organic molecules such as ethyl bromide
5. derivation of spectroscopic ground terms(d1 to d10 without J values), types of electronic transitions(d-d transitions, charge transfer transitions-MLCT and LMCT), selection rule for d-d transitions.

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2018-2019

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: I

Month: June 2018

Syllabus to be covered:

1) Atomic Structure and periodic trends	: RTK
2) Method of analysis	: ARC
3) Purification of Organic compounds	: SSS
4) Solutions	: PMP

Synopsis of portion to be taught in the chapter during the month
1. Postulates of Bohrs theory, calculation of radius and energy of nth orbital, Quantum numbers Significance, Principles. Sommerfield model, de-Broglie hypothesis.
2. Errors in quantitative analysis, classification and minimization, accuracy, precision, standard deviation, t-test, significant figure and rules for computations.
3. Purification of organic compounds : Methods of purification of solids: Crystallization, fractional crystallization and sublimation. Chromatography- Principle.
4. Solution of gas in liquid – Henry's law and limitations. Completely miscible liquid pairs. Azeotropes.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: I **Month: July 2018**

Syllabus to be covered:
1) Atomic Structure and Chemical bonding- I : RTK
2) Principles of volumetric analysis : ARC
3) Chromatography & Stereochemistry of organic compound: SSS
4) Solutions & Gaseous State : PMP

Synopsis of portion to be taught in the chapter during the month
1. Experimental verification-Davisson-Germer experiment, Aufbau principle, Hund's rule, (n+l) rule, Pauli's exclusion principle. Ionic bonding: factors affecting the formation of ionic bonding, Lattice energy and its determination by Born-Haber cycle.
2. Concentration terms, normality, molarity, mole fraction, percentage, primary standard solution, titration-acid-base, precipitation, iodometric, redox and complexometric (with reference to EDTA) titrations, choice of indicators in the above titrations.
3. Chromatography: TLC, PC, CC, Solvent extraction. Mp and BP determination. Baeyer's strain theory, calculation of angle strain, Sachse Mohr theory of strainless rings. Chair and boat forms of cyclohexane. Axial and equatorial bonds.Basic concept of conformational analysis with reference to ethane and butane.
4. Solution of gas in liquid – Theory of azeotropic mixtures, partially miscible liquid systems, critical solution temperature with respect to phenol water, triethyl amine-water and nicotine- water system. Real gas isotherms, Andrew's experiment of CO2, PV-relationship, critical phenomenon of gases.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: I

Month: August 2018

Syllabus to be covered:

1) Chemical bonding- I & Salt hydrolysis : RTK
2) Spectroscopy : ARC
3) Stereochemistry of organic compound : SSS
4) Gaseous State : PMP

Synopsis of portion to be taught in the chapter during the month
1. Covalent bond: Types, factors favouring covalent bond, properties of covalent compounds. Valence bond theory with respect to H2, F2, HCl molecules and its limitations. Types of salts, definition of degree of hydrolysis and hydrolysis constant derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak base and strong acid.
2. Introduction to conventional methods of elucidation of structure of organic compounds (chemical degradation) and comparison with spectroscopic methods, electromagnetic spectrum.
3. Geometrical isomerism: definition, E and Z notation for 2-butene and butenedioic acid, rules for assigning notations. Determination of configuration of butenedioic acid by anhydride formation, dipole moment measurement, melting point and stability.
4. critical phenomenon of gases. Critical constants(Pc, Vc, Tc) – Definition, of critical temperature, critical pressure &critical volume. Relationship between critical constants and Vanderwaals constants, experimental determination of critical constants, reduced equation of state and statement of law of corresponding states.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester: I

Month: Sept 2018

Syllabus to be covered:

1) Salt hydrolysis & Nernst distribution law : RTK
2) Spectroscopy : ARC
3) Stereochemistry of organic compound : SSS
4) Gaseous State : PMP

Synopsis of portion to be taught in the chapter during the month
1. Derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak acid and strong base. Numerical problems. Statement and limitations, applications of Nernst distribution law in solvent Extraction
2. UV spectroscopy: Principle, types of transitions, chromophores, concept of auxochromes and their effect on λmax, bathochromic shift, hypsochromic shift, hypochromic and hyperchromic shift.
3 Optical isomerism: Chirality, van't Hoff-Lebel hypothesis, optical activity, D and L configurations, R and S notations, sequence and priority rules, enantiomers, diastereoisomers, epimers, anomers, racemic and meso (with suitable examples likelactic and tartaric acids.), racemisation.
4. Liquification of gases(Linde's method only), Maxwell's law of distribution of molecular velocities(No derivation).

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: I **Month: Oct 2018**

Syllabus to be covered:

1) Spectroscopy : ARC
2) Stereochemistry of organic compound : SSS
3) Gaseous State : PMP

Synopsis of portion to be taught in the chapter during the month
1. UV spectroscopy: Woodward and Fieser rules and illustration of calculation of λmax taking myrcene and B-phelladrene as examples.
2. Optical isomerism: Resolution of racemic mixture by chemical method, asymmetric synthesis, Walden inversion.
3. Effect temperature on distribution of molecular velocities.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : II **Month : Dec 2018**

Syllabus to be covered:

1) Chemical bonding-II	: RTK
2) Thermochemistry	: ARC
3)Alkenes	: SSS
4) Aromatic Hydrocarbons	: PMP

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2. Kirchoff's equation, bond energies and bond dissociation energies, calculation of bond energy and bond dissociation energies by taking simple molecules. Numerical problems.
3. Alkenes: Methods of preparation of alkenes by (i) dehydration of alcohols (ii) dehydro halogenation. Saytezaff's elimination (Formation of highly substituted alkene, 2-butene), Hofmann orientation (Formation of least substituted alkene, 1-pentene).
4. Resonance in benzene, Aromaticity–Huckel's 4n +2 rule with respect to benzene, furan, pyridine and [10]–annulene.

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MONTHLY TEACHING PLAN

Semester: II **Month: January 2019**

Syllabus to be covered :

1) Chemical bonding-II	: RTK
2) Thermodynamics	: ARC
3)Alkenes	: SSS
4) Aromatic Hydrocarbons	: PMP

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2 Statement, isothermal and adiabatic process, expression for work done in the reversible expansion of adiabatic expansion of an ideal gas (PV^{γ}=Constant) Joule- Thomson effect, Joule-Thomson experiment.
3. Alkenes: Chemical reactions of alkenes- Peroxide effect and its mechanism, hydroboration, oxidation, oxy-mercuration–reduction and mechanism, ozonolysis with respect to 2-butene and 2-methyl-2-butene, oxidation with $KMnO_4$.
4. Mechanism of electrophilic aromatic substitution–halogenation, nitration, sulphonation and Friedel-Craft's reaction (evidences for two step mechanism and evidences for formation of electrophile).

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MONTHLY TEACHING PLAN

Semester : II **Month : Feb 2019**

Syllabus to be covered:

1) Chemical bonding-II	: RTK
2) First law of thermodynamics & Liquid state	: ARC
3)Dienes	: SSS
4) Aromatic Hydrocarbons	: SSS

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hydrogen bonding: Types, significance of hydrogen bonding, properties explainedby hydrogen bonding like a)State of H2O and H2S b) Melting and Boiling point c) Ice has less density than water.
2 derivation of Joule Thomson coefficient for an ideal gas and inversion temperature. Liquid State: Introduction, Definition and Types and application
3. Dienes: Classification and Nomenclature Preparation of 1,3 butadiene; 1,2 and 1,4 addition reactions (addition of halogens and halogen acids), Diel's-Alder reaction, polymerization of 1,3 butadiene.
4. Classification, examples, constitution of naphthalene, Haworth synthesis, nitration and sulphonation of naphthalene.

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MONTHLY TEACHING PLAN

Semester : II **Month : March 2019**

Syllabus to be covered :

1) Solids	: RTK
2) Liquid state	: ARC
3) Alkynes and Collides	: SSS
4) Conversions	: PMP

Synopsis of portion to be taught in the chapter during the month
1. Space lattice, unit cell, crystal systems, calculation of particles per unit cell, laws of crystallography, x-ray diffraction of crystals, derivation of Brag's equation, Miller indices.
2 Surface Tension: Effect of temperature on surface tension. Determination of surface tension of liquid by drop numbers method, parachor and its application. Viscosity: Effect of temperature on viscosity, determination of relative, absolute and intrinsic viscosity of liquids by ostwald's viscometer method.
3 Alkynes: Acidity of Alkynes, reactions of acetylene –metal ammonia reduction, oxidation and polymerization Colloids : Emulsions: Types of emulsions, Preparation and emulsifiers.
4 Conversions 1) Alkanes to alkyhalides to alcohols and vice versa 2) Alkanes to alkyl cyanides to carboxylic acids 3) Benzene to p-nitrobenzoic acid 4) Benzene to m-bromoaniline 5) Naphthalene to 1,4–naphthaquinone 6) Naphthalene to anthranilic acid

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MONTHLY TEACHING PLAN

Semester : II **Month : April 2019**

Syllabus to be covered :

1) Solids	: RTK
2) Liquid state	: ARC
3) Collides	: SSS
4) Organic reagents in inorganic analysis	: PMP

Synopsis of portion to be taught in the chapter during the month
1. Determination of structure of NaCl by rotating single crystal method.
2 Refractive index of liquid: Specific and molar refractions, determination of refractive index of liquid by Abbe's refractometer.
3 Gels: Classification, preparation and properties, general applications of colloids.
4. Sensitivity, selectivity and specificity, advantages of organic reagents over inorganic reagents - Dimethyl glyoxime, 8-hydroxyquinoline(oxime).

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MONTHLY TEACHING PLAN

Semester : III **Month : JUNE 2018**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	:SMD
3) Acids and Bases	: CVB
4) Orientation	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Review of steps involved in metallurgical process, thermodynamic concepts of selection of reducing agents using Ellingham diagrams.
2 Raoult's law, concept of lowering of vapour pressure, elevation of boiling point .
3 Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and bases.
4. Review of inductive, electromeric, resonance and hyperconjugation effects, activating and deactivating groups.

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MONTHLY TEACHING PLAN

Semester : III **Month : JULY 2018**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	: SMD
3) Acids and Bases & IR Spetroscopy	: CVB
4) Orientation & Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide.
2 Depression in freezing point and osmotic pressure, derivation of Kb and Kf by thermodynamic treatment, experimental determination of molecular weight by –Landsberger's method, Beckmann's method, Berkely and Hartley method
3 Hard and soft acids and bases(HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept, IR spectroscopy: Principle, types of vibrations,
4.Orientation of substituent in aromatic compounds with different functional groups like –OH, -NH2, -Cl, -NO2, -CH3, and -COOH in halogenation and nitration reactions (only electronic interpretation) Alcohols :Introduction and nomenclature of dihydric and trihydric alcohols, preparation of glycol from ethene.

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MONTHLY TEACHING PLAN

Semester : III **Month : August 2018**

Syllabus to be covered :

1) Metallurgy : ARC
2) Colligative properties & second law of thermodynamics :SMD
3) IR Spectroscopy :CVB
4) Alcohols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide. Powder metallurgy - Production of tungsten powder from wolframite.
2 Colligative properties : Numerical problems Statement, cyclic process, Carnot's cycle, heat engine and its efficiently, Carnot's theorem, entropy and its significance.
3 identification of following organic compounds by stretching frequencies–Alkanes, alkenes, alkynes, benzene, aldehydes, ketone, alcohol, thiols, acids, esters, amines, problems based on molecular formula and stretching frequency.
4. oxidative cleavage of ethylene glycol with lead tetra acetate and per iodic acid, pinacol–pinacolone rearrangement, preparation of glycerol from propene, synthesis and uses of nitroglycerine, composition and uses of dynamite and cordite, distinction between primary, secondary and tertiary alcohols by Lucas reagent.

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MONTHLY TEACHING PLAN

Semester : III **Month : Sept 2018**

Syllabus to be covered :
1) Solvents : ARC
2) Second law of thermodynamics :SMD
3) Phenols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Types, properties of good solvents, non-aqueous solvents - Liquid NH3 and liquid HF, (properties like solvation, acid-base, redox, complex formation and precipitation), water as universal solvent, leveling effect.
2. Carnot's theorem, entropy and its significance, entropy changes in reversible and irreversible process for ideas gases, free energy, dependence of free energy on pressure and temperature.
3. Phenols :Classification and nomenclature, acidic character of phenol compared to alcohol and cyclohexenol, mechanism of Fries rearrangement, Claisen rearrangement, Elbs persulphate oxidation and Lederer-Manasse reaction, synthesis and uses of n-hexyl resorcinol and picric acid, structure and uses of dettol.

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MONTHLY TEACHING PLAN

Semester : III **Month : Oct 2018**

Syllabus to be covered :

1) 2nd law of thermodynamics :SMD
2) Organometallic compounds: VAS

Synopsis of portion to be taught in the chapter during the month
1. Gibb's–Helmholtz equation, Clausius-Clapeyron equation and its applications, problems on above, partial molal quantities, chemical potential of on ideal gas
2 .Synthesis of methyl magnesium iodide and its synthetic applications in the preparation of alcohols(primary, secondary and tertiary) aldehyde, ketone, ester, carboxylic acid, amines and alkanes. Organo-lithium compounds: Preparation of Lithium dialkylcuprate and synthesis of higher alkane from it.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Dec 2018**

Syllabus to be covered:

1) Environmental Chemistry	:ARC
2) Bio-inorganic Chemistry	:SMD
3) d & f block elements	:CVB
4) Carboxylic acids	:VAS

Synopsis of portion to be taught in the chapter during the month
1. : Types of pollutants, sources..
2 Essential and trace elements in biological process.
3 General characteristics of d block elements- Electronic configuration, oxidation states
4. Nomenclature, structure and bonding, acid strengths of mono, di and trichloroacetic Acids

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MONTHLY TEACHING PLAN

Semester: IV **Month: Jan 2019**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Bio-inorganic Chemistry & Electrochemistry	: SMD
3) d & f block elements	: CVB
4) Carboxylic acids	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Control measures- CO, CO2, SOx, NOx, H2S, hydrocarbons, CFC's and particulates, pesticides, and their adverse effects. Water pollution: Types of pollutants, sources and adverse effects (sewage,infectious agents).
2 Metalloporphyrins with respect to haemoglobin and chlorophyll(structure and function), biological role of Na, K, Fe and Zn. Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes.
3.Metallic property, colour, reactivity, reducing property, magnetic, catalytic and complex formation properties. General characteristics of f block elements - Electronic configuration, cause and consequences of lanthanide contraction. General features of actinides- electronic configuration, oxidation state, extraction of uranium from pitchblende.
4. Acid strengths of nitro, chloro and hydroxy substituted benzoic acids, mechanism of esterification and hydrolysis of ester (Aac2 and Bac2). Reactions of carboxylic acids - i) Conversion into acid derivatives(acid chlorides, amides, esters and anhydrides), ii) Curtius rearrangement, iii) Reaction with organometallic compounds and iv) Hell-Volhard-Zelinsky reaction.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Feb 2019**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Organic chemicals and inorganic mineral, oils and sediments) Parameters of water pollution – Dissolved oxygen(DO), biological oxygen demand(BOD) and chemical oxygen demand(COD), definitions and their determinations. Treatment of sewage and industrial effluents - Preliminary, primary and secondary treatment(Aerated lagoons, trickling filters and activated sludge)
2 Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes..Applications of conductance measurements Determination of solubility product of sparingly soluble salts
3 Second order reaction with examples, derivation of rate constant equation of second order reaction when concentration of the reactions are equal(a=b), half life period, determination of order of reaction by a) Differential equation method b) Half life method
4. Classification, distinction between primary, secondary and tertiary amines by nitrous acid test, comparison of basic character of methyl amine, aniline and cyclohexylamine, amine salts as phase transfer catalysts, mechanism of Hoffmann rearrangement, Grabiel phthalimide reaction, diazotisation

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MONTHLY TEACHING PLAN

Semester: IV **Month: March 2019**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines & Ethers	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Aldehydes and Ketones: Nomenclature, structure and Bonding, mechanism of nucleophillic addition reactions-Hydrogen cyanide, hydroxyl amine, acetal formation–with ethanol and ethylene glycol. Mechanism of the following reactions 1) Aldol condensation 2) Cannizzarro's reaction 3) Claisen-Schmidt reaction
2. Conductometric titrations - types of acid –base titrations and precipitation titrations c) Determination of degree of dissociation of weak electrolytes Ionic mobility.
3. Simple collision theory of reaction rates: Derivation of rate constants of unimolecular (Lindemann hypothesis) and bimolecular reaction rates, limitation of collision theory. Transition state theory, Comparison of transition state theory and collision theory, steric factor.
4. Synthetic applications of diazonium salts-reduction, Sandmeyer's reaction, coupling reactions. Nomenclature of ethers and their methods of preparation, chemical reactions - Reaction with III, hot and cold taking symmetric and unsymmetrical ethers. Crown ethers: Definition, examples, use of crown ethers as phase transfer catalysts.

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MONTHLY TEACHING PLAN

Semester: IV **Month: April 2019**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Epoxies	: VAS

Synopsis of portion to be taught in the chapter during the month
1 1) Perkin's reaction 2) Benzoin condensation 3) Baeyer-Villiger oxidation of ketones 4) Mannich reaction, Synthesis of Coumarin and Vanillin.
2 .Transport number and its determination by Hittorff's method.
3 Chemical kinetics of complex reactions-first order reaction, opposing, consecutive and parallel reactions.
4. Epoxides: Synthesis of 1,2-epoxy ethane and 1,2-epoxycyclopentane, acid catalysed ring opening of 1,2-epoxycyclopentane in aqueous solution.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month June 2018**

Syllabus to be covered:

1) Coordination Chemistry I	: AKS
2) Theory of gravimetric analysis	: CVB
3) Green Chemistry	: MSD
4) Microwave Spectroscopy	: VSC
5) Phase rule	: SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- double salts, complex salts, central metal ion, ligand, types of ligands,
2.Principles of gravimetric analysis- super saturation, von Weimar equation, conditions of precipitation, co precipitation and post precipitation.
3.The need for green chemistry and eco-efficiency, green methods, green products.
4.Classification of molecules, rotational spectra of rigid diatomic molecules.
5.Terminology and explanation of the terms involved .applications of phase rule

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: July 2018**

Syllabus to be covered: 1) Coordination Chemistry I : AKS
2) Theory of gravimetric analysis : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Microwave Spectroscopy : VSC
5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1. complex ion and coordination number. IUPAC nomenclature Valence bond theory of coordination compounds with reference to [Fe(CN)6]3-, [Fe(CN)6]4-, [FeF6]3-, [Zn(NH3)4]2+, [Ni(CN)4]2- and its limitations.
2. Separation of precipitate from mother liquor, washing, properties of wash liquid, drying and ignition of precipitate, weighing form.
3. Green methods, green products, recycling of wastes, 12 principles of green chemistry. Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine,
4. Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.
5. One component system-water and sulphur systemsTwo-component systems-Bismuth-Cadmium system and KI – water system.Eutectic and freezing mixture.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: August 2018**

Syllabus to be covered:
1) Coordination Chem and inorganic polymers : AKS
2) Alkaloids : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
Isomerism- Ionisation, hydrate, linkage, geometrical and optical in coordination compounds with respect to coordination number 4 and 6. Inorganic polymers, Types, comparison with organic polymers, silicones.
2. Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example.
3. 12 principles of green chemistry, Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule(final equations only).

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Sept 2018**

Syllabus to be covered:

1) Inorganic polymers	: AKS
2) Alkaloids	: CVB
3) Heterocyclic Chem	: MSD
4) Vibrational Spectroscopy	: VSC

Synopsis of portion to be taught in the chapter during the month
1.phosphonitrilic halides- formation, structure and applications.
2. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine.
3. synthesis of the following compounds. i) Furan, thiohene and pyrrole from 1,4- diketones. ii) Pyridine by Hantzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyridine(chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole.
4. selection rules, zero point energy determination of force constant and qualitative relation betweenforce constant and bond dissociation energies. Vibrational degrees of freedom of molecules(Linear and non linear).

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GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: October 2018**

Syllabus to be covered:

3) Organic synthesis via enolates : MSD
4) Microwave Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1. Acidity of α-hydrogens, s ynthesis of ethylacetoacetate(EAA) by Claisen condensation and its mechanism, synthesis of diethyl malonate, keto-enol tautomerism of EAA Synthesis of following compounds using EAA and diethyl malonate: i) ketones ii) carboxylic acids iii) heterocyclic compounds iv) dicarboxylic acids.
2. Classification of molecules, rotational spectra of rigid diatomic molecules, Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: June 2018**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
Alloys-Significance, types of alloys (ferrous and non ferrous alloys).
Preparation, mechanism of action and applications - DCC(Amide formation).
Thermodynamic treatment of law of mass action
Adsorption, derivation of Frendlich and Langmuir's adsorption isotherms

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: July 2018**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
preparation (fusion and electro-deposition) and their applications. **Abrasives**- Classification, Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.
LiAlH4(reduction of aldehyde, carboxylic acid and ester), DDQ(Benzylic oxidation of tetralin, aromatisation of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols),NBS(allylic bromination),
van't Hoff reaction isotherm, relationship between Kp, Kc and Kx, variation of Kp and Kc with temperature and pressure.
Forms of Langmuir's adsorption isotherms at high and low pressure regions, BET equation (No derivation)

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: August 2018**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions & Dyes : APB
3) Kinetics of chain reactions : SGA
4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, Annealing of glass, types, composition and uses of glasses.
OsO4(hydroxylation of alkenes), PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols. Classification, requirement of a dye, colour and constitution. The synthesis of each of the followimg class of dyes- Azo dyes Congo red
Examples of chain reactions, general aspects of chain reactions, chain length, chain transfer reactions
Determination of surface area using BET equation. Calalysis Theories of catalysis-intermediate and adsorption theory,

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Sept 2018**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Dyes : APB
3) Kinetics of chain reactions & Mass Spectroscopy : SGA
4) 4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Cement - Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting. **Pigments** - Manufacture and relative merits of white lead
Vat dyes–Indigo,Anthraquinone dyes–Alizarin Triphenylemethane dyes–Malachite green, Crystal violet Phthalein dyes-Fluoroscein,Eosin; Synthesis of each dyes
chain inhibition, kinetics of branching chain reactions. Principle, instrumentation, definitions of parent peak and base peak,
Enzyme catalysis-Michaelis–Menten equation, industrial applications of catalysis.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Oct 2018**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Mass Spectroscopy : SGA

Synopsis of portion to be taught in the chapter during the month
Lithopone, Titanium white, constituents of paints and varnishes.
McLafferty rearrangement with respect to butyraldehyde.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month Dec 2018**

Syllabus to be covered:
1) Coordination Chemistry II : AKS
2) Metal ligand equilibria : CVB
3) Carbohydrates : PMG
4) Electronic spectrum : VSC
5) Quantum Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- Crystal field theory(CFT) with reference to octahedral, distorted octahedral (Jahn-Tellar distortion), tetrahedral and square planar complexes, calculation of crystal field stabilization energy
2. Stability constant, stepwise and overall formation constants, trends in step wise constants, factors affecting the stability of the metal complexes with reference to the nature of metal ion and ligand.
3. Haworth and conformational formulae of glucose and fructose, mutarotation and its mechanism, osazone formation, Killani's synthesis, Ruff's degradation
4. Concept potential energy curves for bonding and anti-bonding molecular orbitals, qualitative description of selection rules, energy levels and respective transitions,
5. Photoelectric effect - Einstein's photoelectric equation, wave particle duality, de-Broglie hypothesis

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Jan 2019**

Syllabus to be covered:
1) Coordination Chemistry II : AKS
2) Metal ligand equilibria : CVB
3) Carbohydrates : PMG
4) Electronic spectrum, Physical properties and molecular structure : VSC
5) Quantum Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1. factors affecting 10Dq, consequences of crystal field splitting on ionic radii of M+2 ions, enthalpy of hydration of M+2 ions, explanation of colour and magnetic properties of magnetic complexes, limitations of crystal field theory, calculation of magnetic moment using Gouy's method
2. **Chelates** - definition, characteristics, factors influencing the stability of metal chelates and importance of chelates.
3. epimers and epimerisation with respect to monosaccharides, interconversions of glucose and fructose.
4. Frank–Condon principle. **Physical properties and molecular structure** Introduction-dipole moment, induced dipole moment, measurement of dipole moment by temperature variation method and its applications.
5. de-Broglie equation(derivation), experimental verification- Davisson-Germer experiment.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Feb 2019**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : PMG
4) Polymers : VSC

Synopsis of portion to be taught in the chapter during the month
1. Introduction, classification of terpenes, Ingold's isoprene rule, constitution of citral with synthesis
2. Introduction, classification of organotransition metal complexes, 18 electron rule with respect to [Fe(CO)5], [Ni(CO)5], [Mn(CO)5]+,
3. Vitamins: Classification and importance of vitamin-A, B6, B12, C, D and E.
4.Introduction, classification, determination of molar masses of macromolecules by viscometry and Donnan membrane equilibrium.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Mar 2019**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : PMG

Synopsis of portion to be taught in the chapter during the month
1. synthesis of α and β ionones, synthesis of α-terpeniol.
2. ferrocene, structure andbonding in metal olefins (Zeise's Salt).
3. Synthesis of Vitamin-C from D(+)-glucose, synthesis of vitamin-A by Vandropetal.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Dec 2018**

Syllabus to be covered:
1) Electromotive Force : SGA
2) Soil analysis : SMD
3) Chromatography :RTK
4) Chemotherapy :APB

Synopsis of portion to be taught in the chapter during the month
1. Reversible and irreversible cells, EMF of a chemical cell and its measurement by potentiometer, standard cell (Weston standard cell).
2. Macro nutrients, trace metals and organic matter in soil.
3. Principle, types, stationary and mobile phases, physical factors of separation, brief account of paper chromatography, calculation of Rf value, brief account of column chromatography and its applications.
4. Introduction, requirement of an ideal synthetic drug, classification, synthesis and uses of the following- Antipyretics–antipyrine, paracetamol Anaesthetics-novacaine(local) and pentothal sodium(general) Antihistamines–chlorpheniramine maleate(CPM)

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Jan 2019**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Soil analysis	: SMD
3) Chromatography	:RTK
4) Chemotherapy	:APB

Synopsis of portion to be taught in the chapter during the month
1. Types of electrodes - Reference electrode, calomel electrode, derivation of Nernst equation for emf of a cell,
2. Determination of pH, Determination of nitrogen by alkaline permanganate method and phosphorus by Bray's and Olsen's method present in the soil.
3. Principle, Limitations, Instrumentation, Flame photometric determination of Na and K.
4. Antimalarials–paludrine, chloroquine Antibiotics-chloromycetin, penicillin, tetracyclin Para pharmaceutical reagents–Benedict's reagent, sodium citrate, Barfoed reagent

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Semester: VI (Paper-II) **Month Feb 2019**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Photochemistry	: SMD
3) Chromatography	:RTK
4) Soaps & Detergents	:APB
5) Electronic spectra of transition Metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1. concentration cells– with and without transference, liquid junction potential and its derivation, salt bridge.
2. Photochemical reactions, laws of photochemistry – Beer's law, Lambart's Law, Beer-Lambart's Law
3. Principle and applications of thermogravimetric methods (TG and DTA).
4. Soaps - Introduction, manufacture by modern process, cleaning action of soap. Detergents - anionic, cationic, nonionic, with suitable examples, distinction between soaps and detergents, emulsifiers, stabilisers and builders.
5. Russel-Sandar's coupling in defining ground states of spectrochemical series

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Semester: VI (Paper-II) **Month Mar 2019**

Syllabus to be covered:

1) Reaction mechanisms	:CVB
2) Photochemistry	: SMD
3) Chromatography	:RTK
4) NMR spectroscopy	:APB
5) Electronic spectra of transition Metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1. a) Beckmann rearrangement b) Favorskii rearrangement
2. fluorescence, phosphorescence, photosensitization and chemiluminescence.
3. Electrogravimetric determination of Copper.
4. TMS as internal standard-advantnges, interpretation of PMR spectra of simple organic molecules such as ethyl bromide
5 selection rule for d-d transitions, Orgel- energy level diagram-d1 and d2 states

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Apr 2019**

Syllabus to be covered:
1) Reaction mechanisms :CVB
2) NMR spectroscopy :APB
3) Electronic spectra of transition Metal complex :AKS

Synopsis of portion to be taught in the chapter during the month
1.a) Benzidine rearrangement b) Benzillic acid rearrangement
2. n-propyl bromide, iso propyl bromide, ethanol, acetaldehyde and benzene.
3. Discussion of the electronic spectrum of [Ti(H2O)6]3+ complex ion

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MONTHLY TEACHING PLAN

Semester: I

Month: June 2017

Syllabus to be covered:

1) Atomic Structure and periodic trends : RTK
2) Method of analysis : ARC
3) Purification of Organic compounds : PSK
4) Solutions : VSC

Synopsis of portion to be taught in the chapter during the month
1. Postulates of Bohrs theory, calculation of radius and energy of nth orbital, Quantum numbers Significance, Principles. Sommerfield model, de-Broglie hypothesis.
2. Errors in quantitative analysis, classification and minimization, accuracy, precision, standard deviation, t-test, significant figure and rules for computations.
3. Purification of organic compounds : Methods of purification of solids: Crystallization, fractional crystallization and sublimation. Chromatography- Principle.
4. Solution of gas in liquid – Henry's law and limitations. Completely miscible liquid pairs. Azeotropes.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: I

Month: July 2017

Syllabus to be covered:
1) Atomic Structure and Chemical bonding- I : RTK
2) Principles of volumetric analysis : ARC
3) Chromatography & Stereochemistry of organic compound: PSK
4) Solutions & Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Experimental verification-Davisson-Germer experiment, Aufbau principle, Hund's rule, (n+l) rule, Pauli's exclusion principle. Ionic bonding: factors affecting the formation of ionic bonding, Lattice energy and its determination by Born-Haber cycle.
2. Concentration terms, normality, molarity, mole fraction, percentage, primary standard solution, titration-acid-base, precipitation, iodometric, redox and complexometric (with reference to EDTA) titrations, choice of indicators in the above titrations.
3. Chromatography: TLC, PC, CC, Solvent extraction. Mp and BP determination. Baeyer's strain theory, calculation of angle strain, Sachse Mohr theory of strainless rings. Chair and boat forms of cyclohexane. Axial and equatorial bonds.Basic concept of conformational analysis with reference to ethane and butane.
4. Solution of gas in liquid – Theory of azeotropic mixtures, partially miscible liquid systems, critical solution temperature with respect to phenol water, triethyl amine-water and nicotine- water system. Real gas isotherms, Andrew's experiment of CO2, PV-relationship, critical phenomenon of gases.

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MONTHLY TEACHING PLAN

Semester: I

Month: August 2017

Syllabus to be covered:

1) Chemical bonding- I & Salt hydrolysis	RTK
2) Spectroscopy	: ARC
3) Stereochemistry of organic compound	: PSK
4) Gaseous State	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Covalent bond: Types, factors favouring covalent bond, properties of covalent compounds. Valence bond theory with respect to H2, F2, HCl molecules and its limitations. Types of salts, definition of degree of hydrolysis and hydrolysis constant derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak base and strong acid.
2. Introduction to conventional methods of elucidation of structure of organic compounds (chemical degradation) and comparison with spectroscopic methods, electromagnetic spectrum.
3. Geometrical isomerism: definition, *E* and *Z* notation for 2-butene and butenedioic acid, rules for assigning notations. Determination of configuration of butenedioic acid by anhydride formation, dipole moment measurement, melting point and stability.
4. critical phenomenon of gases. Critical constants(Pc, Vc, Tc) – Definition, of critical temperature, critical pressure &critical volume. Relationship between critical constants and Vanderwaals constants, experimental determination of critical constants, reduced equation of state and statement of law of corresponding states.

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MONTHLY TEACHING PLAN

Semester: I **Month: Sept 2017**

Syllabus to be covered:

1) Salt hydrolysis & Nernst distribution law : RTK
2) Spectroscopy : ARC
3) Stereochemistry of organic compound : PSK
4) Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak acid and strong base. Numerical problems. Statement and limitations, applications of Nernst distribution law in solvent Extraction
2. UV spectroscopy: Principle, types of transitions, chromophores, concept of auxochromes and their effect on λmax, bathochromic shift, hypsochromic shift, hypochromic and hyperchromic shift.
3 Optical isomerism: Chirality, van't Hoff-Lebel hypothesis, optical activity, D and L configurations, R and S notations, sequence and priority rules, enantiomers, distereoisomers, epimers, anomers, racemic and meso (with suitable examples likelactic and tartaric acids.), racemisation.
4. Liquification of gases(Linde's method only), Maxwell's law of distribution of molecular velocities(No derivation).

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MONTHLY TEACHING PLAN

Semester: I **Month: Oct 2017**

Syllabus to be covered:
1) Spectroscopy : ARC
2) Stereochemistry of organic compound : PSK
3) Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. UV spectroscopy: Woodward and Fieser rules and illustration of calculation of λmax taking myrcene and B-phelladrene as examples.
2. Optical isomerism: Resolution of racemic mixture by chemical method, asymmetric synthesis, Walden inversion.
3. Effect temperature on distribution of molecular velocities.

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Chemistry Department

MONTHLY TEACHING PLAN

Semester : II **Month : Dec 2017**

Syllabus to be covered:	1) Chemical bonding-II	: RTK
	2) Thermochemistry	: ARC
	3)Alkenes	: PSK
	4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2. Kirchoff's equation, bond energies and bond dissociation energies, calculation of bond energy and bond dissociation energies by taking simple molecules. Numerical problems.
3. Alkenes: Methods of preparation of alkenes by (i) dehydration of alcohols (ii) dehydro halogenation. Saytezaff's elimination (Formation of highly substituted alkene, 2-butene), Hofmann orientation (Formation of least substituted alkene, 1-pentene).
4. Resonance in benzene, Aromaticity–Huckel's 4n +2 rule with respect to benzene, furan, pyridine and [10]–annulene.

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MONTHLY TEACHING PLAN

Semester: II **Month: January 2018**

Syllabus to be covered :

1) Chemical bonding-II	: RTK
2) Thermodynamics	: ARC
3)Alkenes	: PSK
4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2 Statement, isothermal and adiabatic process, expression for work done in the reversible expansion of adiabatic expansion of an ideal gas (PV^{γ}=Constant) Joule- Thomson effect, Joule-Thomson experiment.
3. Alkenes: Chemical reactions of alkenes- Peroxide effect and its mechanism, hydroboration, oxidation, oxy-mercuration–reduction and mechanism, ozonolysis with respect to 2-butene and 2-methyl-2-butene, oxidation with $KMnO_4$.
4. Mechanism of electrophilic aromatic substitution–halogenation, nitration, sulphonation and Friedel-Craft's reaction (evidences for two step mechanism and evidences for formation of electrophile).

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MONTHLY TEACHING PLAN

Semester : II **Month : Feb 2018**

Syllabus to be covered:

1) Chemical bonding-II	: RTK
2) First law of thermodynamics & Liquid state	: ARC
3)Dienes	: PSK
4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hydrogen bonding: Types, significance of hydrogen bonding, properties explainedby hydrogen bonding like a)State of H2O and H2S b) Melting and Boiling point c) Ice has less density than water.
2 derivation of Joule Thomson coefficient for an ideal gas and inversion temperature. Liquid State: Introduction, Definition and Types and application
3. Dienes: Classification and Nomenclature Preparation of 1,3 butadiene; 1,2 and 1,4 addition reactions (addition of halogens and halogen acids), Diel's-Alder reaction, polymerization of 1,3 butadiene.
4. Classification, examples, constitution of naphthalene, Haworth synthesis, nitration and sulphonation of naphthalene.

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MONTHLY TEACHING PLAN

Semester : II **Month : March 2018**

Syllabus to be covered :	1) Solids	: RTK
	2) Liquid state	: ARC
	3) Alkynes and Collides	: PSK
	4) Conversions	: APB

Synopsis of portion to be taught in the chapter during the month
1. Space lattice, unit cell, crystal systems, calculation of particles per unit cell, laws of crystallography, x-ray diffraction of crystals, derivation of Brag's equation, Miller indices.
2 Surface Tension: Effect of temperature on surface tension. Determination of surface tension of liquid by drop numbers method, parachor and its application. Viscosity: Effect of temperature on viscosity, determination of relative, absolute and intrinsic viscosity of liquids by ostwald's viscometer method.
3 Alkynes: Acidity of Alkynes, reactions of acetylene –metal ammonia reduction, oxidation and polymerization Colloids : Emulsions: Types of emulsions, Preparation and emulsifiers.
4 Conversions 1) Alkanes to alkyhalides to alcohols and vice versa 2) Alkanes to alkyl cyanides to carboxylic acids 3) Benzene to p-nitrobenzoic acid 4) Benzene to m-bromoaniline 5) Naphthalene to 1,4- naphthaquinone 6) Naphthalene to anthranilic acid

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MONTHLY TEACHING PLAN

Semester : II **Month : April 2018**

Syllabus to be covered :

1) Solids	: RTK
2) Liquid state	: ARC
3) Collides	: PSK
4) Organic reagents in inorganic analysis	: APB

Synopsis of portion to be taught in the chapter during the month
1. Determination of structure of NaCl by rotating single crystal method.
2 Refractive index of liquid: Specific and molar refractions, determination of refractive index of liquid by Abbe's refractometer.
3 Gels: Classification, preparation and properties, general applications of colloids.
4. Sensitivity, selectivity and specificity, advantages of organic reagents over inorganic reagents - Dimethyl glyoxime, 8-hydroxyquinoline(oxime).

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MONTHLY TEACHING PLAN

Semester : III **Month : JUNE 2017**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	:SMD
3) Acids and Bases	: CVB
4) Orientation	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Review of steps involved in metallurgical process, thermodynamic concepts of selection of reducing agents using Ellingham diagrams.
2 Raoult's law, concept of lowering of vapour pressure, elevation of boiling point .
3 Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and buses.
4. Review of inductive, electromeric, resonance and hyperconjugation effects, activating and deactivating groups.

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MONTHLY TEACHING PLAN

Semester : III **Month : JULY 2017**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	: SMD
3) Acids and Bases & IR Spetroscopy	: CVB
4) Orientation & Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide.
2 Depression in freezing point and osmotic pressure, derivation of Kb and Kf by thermodynamic treatment, experimental determination of molecular weight by –Landsberger's method, Beckmann's method, Berkely and Hartley method
3 Hard and soft acids and bases(HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept. IR spectroscopy: Principle, types of vibrations,
4.Orientation of substituent in aromatic compounds with different functional groups like –OH, -NH2, -Cl, -NO2, -CH3, and -COOH in halogenation and nitration reactions (only electronic interpretation) Alcohols :Introduction and nomenclature of dihydric and trihydric alcohols, preparation of glycol from ethene.

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MONTHLY TEACHING PLAN

Semester : III **Month : August 2017**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties & second law of thermodynamics	:SMD
3) IR Spectroscopy	:CVB
4) Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide. Powder metallurgy - Production of tungsten powder from wolframite.
2 Colligative properties : Numerical problems Statement, cyclic process, Carnot's cycle, heat engine and its efficiently, Carnot's theorem, entropy and its significance.
3 identification of following organic compounds by stretching frequencies–Alkanes, alkenes, alkynes, benzene, aldehydes, ketone, alcohol, thiols, acids, esters, amines, problems based on molecular formula and stretching frequency.
4. oxidative cleavage of ethylene glycol with lead tetra acetate and per iodic acid, pinacol–pinacolone rearrangement, preparation of glycerol from propene, synthesis and uses of nitroglycerine, composition and uses of dynamite and cordite, distinction between primary, secondary and tertiary alcohols by Lucas reagent.

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MONTHLY TEACHING PLAN

Semester : III **Month : Sept 2017**

Syllabus to be covered :
1) Solvents : ARC
2) Second law of thermodynamics :SMD
3) Phenols : VAS

Synopsis of portion to be taught in the chapter during the month
1. Types, properties of good solvents, non-aqueous solvents - Liquid NH3 and liquid HF, (properties like solvation, acid-base, redox, complex formation and precipitation), water as universal solvent, leveling effect.
2. Carnot's theorem, entropy and its significance, entropy changes in reversible and irreversible process for ideas gases, free energy, dependence of free energy on pressure and temperature.
3. Phenols :Classification and nomenclature, acidic character of phenol compared to alcohol and cyclohexenol, mechanism of Fries rearrangement, Claisen rearrangement, Elbs persulphate oxidation and Lederer-Manasse reaction, synthesis and uses of n-hexyl resorcinol and picric acid, structure and uses of dettol.

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MONTHLY TEACHING PLAN

Semester : III **Month : Oct 2017**

Syllabus to be covered :

1) 2^{nd} law of thermodynamics :SMD
2) Organometallic compounds: VAS

Synopsis of portion to be taught in the chapter during the month
1. Gibb's–Helmholtz equation, Clausius-Clapeyron equation and its applications, problems on above, partial molal quantities, chemical potential of on ideal gas
2 .Synthesis of methyl magnesium iodide and its synthetic applications in the preparation of alcohols(primary, secondary and tertiary) aldehyde, ketone, ester, carboxylic acid, amines and alkanes. Organo-lithium compounds: Preparation of Lithium dialkylcuprate and synthesis of higher alkane from it.

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: IV **Month: Dec 2017**

Syllabus to be covered:

1) Environmental Chemistry	:ARC
2) Bio-inorganic Chemistry	:SMD
3) d & f block elements	:CVB
4) Carboxylic acids	:VAS

Synopsis of portion to be taught in the chapter during the month
1. : Types of pollutants, sources..
2 Essential and trace elements in biological process.
3 General characteristics of d block elements- Electronic configuration, oxidation states
4. Nomenclature, structure and bonding, acid strengths of mono, di and trichloroacetic Acids

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: IV **Month: Jan 2018**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Bio-inorganic Chemistry & Electrochemistry	: SMD
3) d & f block elements	: CVB
4) Carboxylic acids	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Control measures- CO, CO2, SOx, NOx, H2S, hydrocarbons, CFC's and particulates, pesticides, and their adverse effects. Water pollution: Types of pollutants, sources and adverse effects (sewage,infectious agents).
2 Metalloporphyrins with respect to haemoglobin and chlorophyll(structure and function), biological role of Na, K, Fe and Zn. Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes.
3.Metallic property, colour, reactivity, reducing property, magnetic, catalytic and complex formation properties. General characteristics of f block elements - Electronic configuration, cause and consequences of lanthanide contraction. General features of actinides- electronic configuration, oxidation state, extraction of uranium from pitchblende.
4. Acid strengths of nitro, chloro and hydroxy substituted benzoic acids, mechanism of esterification and hydrolysis of ester (Aac2 and Bac2). Reactions of carboxylic acids - i) Conversion into acid derivatives(acid chlorides, amides, esters and anhydrides), ii) Curtius rearrangement, iii) Reaction with organometallic compounds and iv) Hell-Volhard-Zelinsky reaction.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Feb 2018**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Organic chemicals and inorganic mineral, oils and sediments) Parameters of water pollution – Dissolved oxygen(DO), biological oxygen demand(BOD) and chemical oxygen demand(COD), definitions and their determinations. Treatment of sewage and industrial effluents - Preliminary, primary and secondary treatment(Aerated lagoons, trickling filters and activated sludge)
2 Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes..Applications of conductance measurements Determination of solubility product of sparingly soluble salts
3 Second order reaction with examples, derivation of rate constant equation of second order reaction when concentration of the reactions are equal(a=b), half life period, determination of order of reaction by a) Differential equation method b) Half life method
4. Classification, distinction between primary, secondary and tertiary amines by nitrous acid test, comparison of basic character of methyl amine, aniline and cyclohexylamine, amine salts as phase transfer catalysts, mechanism of Hoffmann rearrangement, Grabiel phthalimide reaction, diazotisation

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MONTHLY TEACHING PLAN

Semester: IV **Month: March 2018**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines & Ethers	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Aldehydes and Ketones: Nomenclature, structure and Bonding, mechanism of nucleophillic addition reactions-Hydrogen cyanide, hydroxyl amine, acetal formation–with ethanol and ethylene glycol. Mechanism of the following reactions 1) Aldol condensation 2) Cannizzarro's reaction 3) Claisen-Schmidt reaction
2. Conductometric titrations - types of acid –base titrations and precipitation titrations c) Determination of degree of dissociation of weak electrolytes Ionic mobility.
3. Simple collision theory of reaction rates: Derivation of rate constants of unimolecular (Lindemann hypothesis) and bimolecular reaction rates, limitation of collision theory. Transition state theory, Comparison of transition state theory and collision theory, steric factor.
4. Synthetic applications of diazonium salts-reduction, Sandmeyer's reaction, coupling reactions. Nomenclature of ethers and their methods of preparation, chemical reactions - Reaction with HI, hot and cold taking symmetric and unsymmetrical ethers. Crown ethers: Definition, examples, use of crown ethers as phase transfer catalysts.

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MONTHLY TEACHING PLAN

Semester: IV **Month: April 2018**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Epoxies	: VAS

Synopsis of portion to be taught in the chapter during the month
1 1) Perkin's reaction 2) Benzoin condensation 3) Baeyer-Villiger oxidation of ketones 4) Mannich reaction, Synthesis of Coumarin and Vanillin.
2 .Transport number and its determination by Hittorff's method.
3 Chemical kinetics of complex reactions-first order reaction, opposing, consecutive and parallel reactions.
4. Epoxides: Synthesis of 1,2-epoxy ethane and 1,2-epoxycyclopentane, acid catalysed ring opening of 1,2-epoxycyclopentane in aqueous solution.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month June 2017**

Syllabus to be covered:

1) Coordination Chemistry I	: AKS
2) Theory of gravimetric analysis	: CVB
3) Green Chemistry	: MSD
4) Microwave Spectroscopy	: VSC
5) Phase rule	: SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- double salts, complex salts, central metal ion, ligand, types of ligands,
2.Principles of gravimetric analysis- super saturation, von Weimar equation, conditions of precipitation, co precipitation and post precipitation.
3.The need for green chemistry and eco-efficiency, green methods, green products.
4.Classification of molecules, rotational spectra of rigid diatomic molecules.
5.Terminology and explanation of the terms involved .applications of phase rule

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: July 2017**

Syllabus to be covered: 1) Coordination Chemistry I : AKS
2) Theory of gravimetric analysis : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Microwave Spectroscopy : VSC
5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1. complex ion and coordination number. IUPAC nomenclature Valence bond theory of coordination compounds with reference to [Fe(CN)6]3-, [Fe(CN)6]4-, [FeF6]3-, [Zn(NH3)4]2+, [Ni(CN)4]2- and its limitations.
2. Separation of precipitate from mother liquor, washing, properties of wash liquid, drying and Ignition of precipitate, weighing form.
3. Green methods, green products, recycling of wastes, 12 principles of green chemistry. Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.
5. One component system-water and sulphur systemsTwo-component systems-Bismuth-Cadmium system and KI – water system.Eutectic and freezing mixture.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: August 2017**

Syllabus to be covered:
1) Coordination Chem and inorganic polymers : AKS
2) Alkaloids : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
Isomerism- Ionisation, hydrate, linkage, geometrical and optical in coordination compounds with respect to coordination number 4 and 6. Inorganic polymers, Types, comparison with organic polymers, silicones.
2. Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example.
3. 12 principles of green chemistry, Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule(final equations only),

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Sept 2017**

Syllabus to be covered:

1) Inorganic polymers	: AKS
2) Alkaloids	: CVB
3) Heterocyclic Chem	: MSD
4) Vibrational Spectroscopy	: VSC

Synopsis of portion to be taught in the chapter during the month
1.phosphonitrilic halides- formation, structure and applications.
2. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine.
3. synthesis of the following compounds. i) Furan, thiohene and pyrrole from 1,4- diketones. ii) Pyridine by Huntzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyndine(chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole.
4. selection rules, zero point energy determination of force constant and qualitative relation betweenforce constant and bond dissociation energies. Vibrational degrees of freedom of molecules(Linear and non linear).

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: October 2017**

Syllabus to be covered:

3) Organic synthesis via enolates : MSD
4) Microwave Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1. Acidity of α-hydrogens, s ynthesis of ethylacetoacetate(EAA) by Claisen condensation and its mechanism, synthesis of diethyl malonate, keto-enol tautomerism of EAA Synthesis of following compounds using EAA and diethyl malonate: i) ketones ii) carboxylic acids iii) heterocyclic compounds iv) dicarboxylic acids.
2. Classification of molecules, rotational spectra of rigid diatomic molecules, Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: June 2017**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
Alloys-Significance, types of alloys (ferrous and non ferrous alloys).
Preparation, mechanism of action and applications - DCC(Amide formation).
Thermodynamic treatment of law of mass action
Adsorption, derivation of Frendlich and Langmuir's adsorption isotherms

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: July 2017**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
preparation (fusion and electro-deposition) and their applications. **Abrasives-** Classification, Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.
LiAlH4(reduction of aldehyde, carboxylic acid and ester), DDQ(Benzylic oxidation of tetralin, aromatisation of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols),NBS(allylic bromination),
van't Hoff reaction isotherm, relationship between Kp, Kc and Kx, variation of Kp and Kc with temperature and pressure.
Forms of Langmuir's adsorption isotherms at high and low pressure regions, BET equation (No derivation)

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: August 2017**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions & Dyes : APB
3) Kinetics of chain reactions : SGA
4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, Annealing of glass, types, composition and uses of glasses.
OsO4(hydroxylation of alkenes), PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols. Classification, requirement of a dye, colour and constitution. The synthesis of each of the followimg class of dyes- Azo dyes Congo red
Examples of chain reactions, general aspects of chain reactions, chain length, chain transfer reactions
Determination of surface area using BET equation. Calalysis–Theories of catalysis-intermediate and adsorption theory,

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Sept 2017**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Dyes : APB
3) Kinetics of chain reactions & Mass Spectroscopy : SGA
4) 4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Cement - Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting. **Pigments** - Manufacture and relative merits of white lead
Vat dyes–Indigo,Anthraquinone dyes–Alizarin Triphenylemethane dyes–Malachite green, Crystal violet Phthalein dyes-Fluorescein,Eosin; Synthesis of each dyes
chain inhibition, kinetics of branching chain reactions.
Principle, instrumentation, definitions of parent peak and base peak,
Enzyme catalysis-Michaelis–Menten equation, industrial applications of catalysis.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Oct 2017**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Mass Spectroscopy : SGA

Synopsis of portion to be taught in the chapter during the month
Lithopone, Titanium white, constituents of paints and varnishes.
McLafferty rearrangement with respect to butyraldehyde.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month Dec 2017**

Syllabus to be covered:
1) Coordination Chemistry II : AKS
2) Metal ligand equilibria : CVB
3) Carbohydrates : MSD
4) Electronic spectrum : VSC
5) Quantum Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- Crystal field theory(CFT) with reference to octahedral, distorted octahedral (Jahn-Tellar distortion), tetrahedral and square planar complexes, calculation of crystal field stabilization energy
2. Stability constant, stepwise and overall formation constants, trends in step wise constants, factors affecting the stability of the metal complexes with reference to the nature of metal ion and ligand.
3. Haworth and conformational formulae of glucose and fructose, mutarotation and its mechanism, osazone formation, Killani's synthesis, Ruff's degradation
4. Concept potential energy curves for bonding and anti-bonding molecular orbitals, qualitative description of selection rules, energy levels and respective transitions,
5. Photoelectric effect - Einstein's photoelectric equation, wave particle duality, de-Broglie hypothesis

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Jan 2018**

Syllabus to be covered: 1) Coordination Chemistry II : AKS
2) Metal ligand equilibria : CVB
3) Carbohydrates : MSD
4) Electronic spectrum, Physical properties and molecular structure : VSC
5) Quantum Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1. factors affecting 10Dq, consequences of crystal field splitting on ionic radii of M+2 ions, enthalpy of hydration of M+2 ions, explanation of colour and magnetic properties of magnetic complexes, limitations of crystal field theory, calculation of magnetic moment using Gouy's method
2. **Chelates** - definition, characteristics, factors influencing the stability of metal chelates and importance of chelates.
3. epimers and epimerisation with respect to monosaccharides, interconversions of glucose and fructose.
4. Frank–Condon principle. **Physical properties and molecular structure** Introduction-dipole moment, induced dipole moment, measurement of dipole moment by temperature variation method and its applications.
5. de-Broglie equation(derivation), experimental verification- Davisson-Germer experiment.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Feb 2018**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : MSD
4) Polymers : VSC

Synopsis of portion to be taught in the chapter during the month
1. Introduction, classification of terpenes, Ingold's isoprene rule, constitution of citral with synthesis
2. Introduction, classification of organotransition metal complexes, 18 electron rule with respect to $[Fe(CO)5]$, $[Ni(CO)5]$, $[Mn(CO)5]^+$,
3. Vitamins: Classification and importance of vitamin-A, B6, B12, C, D and E.
4.Introduction, classification, determination of molar masses of macromolecules by viscometry and Donnan membrane equilibrium.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Mar 2018**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : MSD

Synopsis of portion to be taught in the chapter during the month
1. synthesis of α and β ionones, synthesis of α-terpeniol.
2. ferrocene, structure andbonding in metal olefins (Zeise's Salt).
3. Synthesis of Vitamin-C from D(+)-glucose, synthesis of vitamin-A by Vandropetal.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Dec 2017**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Soil analysis	: SMD
3) Chromatography	:RTK
4) Chemotherapy	:APB

Synopsis of portion to be taught in the chapter during the month
1. Reversible and irreversible cells, EMF of a chemical cell and its measurement by potentiometer, standard cell (Weston standard cell).
2. Macro nutrients, trace metals and organic matter in soil.
3. Principle, types, stationary and mobile phases, physical factors of separation, brief account of paper chromatography, calculation of Rf value, brief account of column chromatography and its applications.
4. Introduction, requirement of an ideal synthetic drug, classification, synthesis and uses of the following- Antipyretics–antipyrine, paracetamol Anaesthetics-novacaine(local) and pentothal sodium(general) Antihistamines–chlorpheniramine malcate(CPM)

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Jan 2018**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Soil analysis	: SMD
3) Chromatography	:RTK
4) Chemotherapy	:APB

Synopsis of portion to be taught in the chapter during the month
1. Types of electrodes - Reference electrode, calomel electrode, derivation of Nernst equation for emf of a cell,
2. Determination of pH, Determination of nitrogen by alkaline permanganate method and phosphorus by Bray's and Olsen's method present in the soil.
3. Principle, Limitations, Instrumentation, Flame photometric determination of Na and K.
4. Antimalarials–paludrine, chloroquine Antibiotics-chloromycetin, penicillin, tetracyclin Para pharmaceutical reagents–Benedict's reagent, sodium citrate, Barfoed reagent

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Semester: VI (Paper-II) **Month Feb 2018**

Syllabus to be covered:

1) Electromotive Force : SGA
2) Photochemistry : SMD
3) Chromatography :RTK
4) Soaps & Detergents :APB
5) Electronic spectra of transition Metal complex :AKS

Synopsis of portion to be taught in the chapter during the month
1. concentration cells– with and without transference, liquid junction potential and its derivation, salt bridge.
2. Photochemical reactions, laws of photochemistry – Beer's law, Lambart's Law, Beer-Lambart's Law
3. Principle and applications of thermogravimetric methods (TG and DTA).
4. Soaps - Introduction, manufacture by modern process, cleaning action of soap. Detergents - anionic, cationic, nonionic, with suitable examples, distinction between soaps and detergents, emulsifiers, stabilisers and builders.
5. Russel-Sandar's coupling in defining ground states of spectrochemical series

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Mar 2018**

Syllabus to be covered:

1) Reaction mechanisms	:CVB
2) Photochemistry	: SMD
3) Chromatography	:RTK
4) NMR spectroscopy	:APB
5) Electronic spectra of transition Metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1. a) Beckmann rearrangement b) Favorskii rearrangement
2. fluorescence, phosphorescence, photosensitization and chemiluminescence.
3. Electrogravimetric determination of Copper.
4. TMS as internal standard-advantages, interpretation of PMR spectra of simple organic molecules such as ethyl bromide
5 selection rule for d-d transitions, Orgel- energy level diagram-d1 and d2 states

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MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Apr 2018**

Syllabus to be covered:
1) Reaction mechanisms :CVB
2) NMR spectroscopy :APB
3) Electronic spectra of transition Metal complex :AKS

Synopsis of portion to be taught in the chapter during the month
1.a) Benzidine rearrangement b) Benzillic acid rearrangement
2. n-propyl bromide, iso propyl bromide, ethanol, acetaldehyde and benzene.
3. Discussion of the electronic spectrum of $[Ti(H_2O)_6]^{3+}$ complex ion

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MONTHLY TEACHING PLAN

Semester: I **Month: June 2016**

Syllabus to be covered:

1) Atomic Structure and periodic trends : RTK
2) Method of analysis : ARC
3) Purification of Organic compounds : PSK
4) Solutions : VSC

Synopsis of portion to be taught in the chapter during the month
1. Postulates of Bohrs theory, calculation of radius and energy of nth orbital, Quantum numbers Significance, Principles. Sommerfield model, de-Broglie hypothesis.
2. Errors in quantitative analysis, classification and minimization, accuracy, precision, standard deviation, t-test, significant figure and rules for computations.
3. Purification of organic compounds : Methods of purification of solids: Crystallization, fractional crystallization and sublimation. Chromatography- Principle.
4. Solution of gas in liquid – Henry's law and limitations. Completely miscible liquid pairs. Azeotropes

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MONTHLY TEACHING PLAN

Semester: I **Month: July 2016**

Syllabus to be covered:
1) Atomic Structure and Chemical bonding- I : RTK
2) Principles of volumetric analysis : ARC
3) Chromatography & Stereochemistry of organic compound: PSK
4) Solutions & Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Experimental verification-Davisson-Germer experiment, Aufbau principle, Hund's rule, (n+l) rule, Pauli's exclusion principle. Ionic bonding: factors affecting the formation of ionic bonding. Lattice energy and its determination by Born-Haber cycle.
2. Concentration terms, normality, molarity, mole fraction, percentage, primary standard solution, titration-acid-base, precipitation, iodometric, redox and complexometric (with reference to EDTA) titrations, choice of indicators in the above titrations.
3. Chromatography: TLC, PC, CC, Solvent extraction. Mp and BP determination. Baeyer's strain theory, calculation of angle strain, Sachse Mohr theory of strainless rings. Chair and boat forms of cyclohexane. Axial and equatorial bonds.Basic concept of conformational analysis with reference to ethane and butane.
4. Solution of gas in liquid – Theory of azeotropic mixtures, partially miscible liquid systems, critical solution temperature with respect to phenol water, triethyl amine-water and nicotine- water system. Real gas isotherms, Andrew's experiment of CO2, PV-relationship, critical phenomenon of gases.

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MONTHLY TEACHING PLAN

Semester: I **Month: August 2016**

Syllabus to be covered:

1) Chemical bonding- I & Salt hydrolysis	RTK
2) Spectroscopy	: ARC
3) Stereochemistry of organic compound	: PSK
4) Gaseous State	: VSC

Synopsis of portion to be taught in the chapter during the month
1. Covalent bond: Types, factors favouring covalent bond, properties of covalent compounds. Valence bond theory with respect to H2, F2, HCl molecules and its limitations. Types of salts, definition of degree of hydrolysis and hydrolysis constant derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak base and strong acid
2. Introduction to conventional methods of elucidation of structure of organic compounds (chemical degradation) and comparison with spectroscopic methods, electromagnetic spectrum.
3. Geometrical isomerism: definition, E and Z notation for 2-butene and butenedioic acid, rules for assigning notations. Determination of configuration of butenedioic acid by anhydride formation, dipole moment measurement, melting point and stability.
4. critical phenomenon of gases. Critical constants(Pc, Vc, Tc) – Definition, of critical temperature, critical pressure &critical volume. Relationship between critical constants and Vanderwaals constants, experimental determination of critical constants, reduced equation of state and statement of law of corresponding states.

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MONTHLY TEACHING PLAN

Semester: I **Month: Sept 2016**

Syllabus to be covered:

1) Salt hydrolysis & Nernst distribution law : RTK
2) Spectroscopy : ARC
3) Stereochemistry of organic compound : PSK
4) Gaseous State : VSC

Synopsis of portion to be taught in the chapter during the month
1. Derive the relation between Kh, Ka & Kw and expression for pH in case of hydrolysis of the following - salts of weak acid and strong base. Numerical problems. Statement and limitations, applications of Nernst distribution law in solvent Extraction
2. UV spectroscopy: Principle, types of transitions, chromophores, concept of auxochromes and their effect on λmax, bathochromic shift, hypsochromic shift, hypochromic and hyperchromic shift.
3 Optical isomerism: Chirality, van't Hoff-Lebel hypothesis, optical activity, D and L configurations, R and S notations, sequence and priority rules, enantiomers, distereoisomers, epimers, anomers, racemic and meso (with suitable examples likelactic and tartaric acids.), racemisation.
4. Liquification of gases(Linde's method only), Maxwell's law of distribution of molecular velocities(No derivation).

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MONTHLY TEACHING PLAN

Semester: I **Month: Oct 2016**

Syllabus to be covered:

1) Spectroscopy	: ARC
2) Stereochemistry of organic compound	: PSK
3) Gaseous State	: VSC

Synopsis of portion to be taught in the chapter during the month
1. UV spectroscopy: Woodward and Fieser rules and illustration of calculation of λmax taking myrcene and B-phellandrene as examples.
2. Optical isomerism: Resolution of racemic mixture by chemical method, asymmetric synthesis, Walden inversion.
3. Effect temperature on distribution of molecular velocities.

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SKE Society's
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Chemistry Department

MONTHLY TEACHING PLAN

Semester : II **Month : Dec 2016**

Syllabus to be covered:	1) Chemical bonding-II	: RTK
	2) Thermochemistry	: ARC
	3)Alkenes	: PSK
	4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2. Kirchoff's equation, bond energies and bond dissociation energies, calculation of bond energy and bond dissociation energies by taking simple molecules. Numerical problems.
3. Alkenes: Methods of preparation of alkenes by (i) dehydration of alcohols (ii) dehydro halogenation. Saytezaff's elimination (Formation of highly substituted alkene, 2-butene), Hofmann orientation (Formation of least substituted alkene, 1-pentene).
4. Resonance in benzene, Aromaticity–Huckel's 4n +2 rule with respect to benzene, furan, pyridine and [10] annulene.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester: II **Month: January 2017**

Syllabus to be covered :

1) Chemical bonding-II	: RTK
2) Thermodynamics	: ARC
3)Alkenes	: PSK
4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hybridization: Salient features of hybridization, geometry of molecules with respect to sp, sp2, sp3, dsp3, sp3d2 hybridization.
2 Statement, isothermal and adiabatic process, expression for work done in the reversible expansion of adiabatic expansion of an ideal gas (PV^{γ}=Constant) Joule- Thomson effect, Joule-Thomson experiment.
3. Alkenes: Chemical reactions of alkenes- Peroxide effect and its mechanism, hydroboration, oxidation, oxy-mercuration reduction and mechanism, ozonolysis with respect to 2-butene and 2-methyl-2-butene, oxidation with $KMnO_4$.
4. Mechanism of electrophilic aromatic substitution halogenation, nitration, sulphonation and Friedel-Craft's reaction (evidences for two step mechanism and evidences for formation of electrophile).

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester : II **Month : Feb 2017**

Syllabus to be covered:	1) Chemical bonding-II	: RTK
	2) First law of thermodynamics & Liquid state	: ARC
	3)Dienes	: PSK
	4) Aromatic Hydrocarbons	: APB

Synopsis of portion to be taught in the chapter during the month
1. Chemical Bonding II: Hydrogen bonding: Types, significance of hydrogen bonding, properties explainedby hydrogen bonding like a)State of H2O and H2S b) Melting and Boiling point c) Ice has less density than water.
2 derivation of Joule Thomson coefficient for an ideal gas and inversion temperature. Liquid State: Introduction, Definition and Types and application
3. Dienes: Classification and Nomenclature Preparation of 1,3 butadiene; 1,2 and 1,4 addition reactions (addition of halogens and halogen acids), Diel's-Alder reaction, polymerization of 1,3 butadiene.
4. Classification, examples, constitution of naphthalene, Haworth synthesis, nitration and sulphonation of naphthalene.

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester : II **Month : March 2017**

Syllabus to be covered :

1) Solids	: RTK
2) Liquid state	: ARC
3) Alkynes and Collides	: PSK
4) Conversions	: APB

Synopsis of portion to be taught in the chapter during the month
1. Space lattice, unit cell, crystal systems, calculation of particles per unit cell, laws of crystallography, x-ray diffraction of crystals, derivation of Brag's equation, Miller indices.
2 Surface Tension: Effect of temperature on surface tension. Determination of surface tension of liquid by drop numbers method, parachor and its application. Viscosity: Effect of temperature on viscosity, determination of relative, absolute and intrinsic viscosity of liquids by ostwald's viscometer method.
3 Alkynes: Acidity of Alkynes, reactions of acetylene –metal ammonia reduction, oxidation and polymerization Colloids : Emulsions: Types of emulsions, Preparation and emulsifiers.
4 Conversions 1) Alkanes to alkyhalides to alcohols and vice versa 2) Alkanes to alkyl cyanides to carboxylic acids 3) Benzene to p-nitrobenzoic acid 4) Benzene to m-bromoaniline 5) Naphthalene to 1,4–naphthaquinone 6) Naphthalene to anthranilic acid

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MONTHLY TEACHING PLAN

Semester : II **Month : April 2017**

Syllabus to be covered :	1) Solids	: RTK
	2) Liquid state	: ARC
	3) Collides	: PSK
	4) Organic reagents in inorganic analysis	: APB

Synopsis of portion to be taught in the chapter during the month
1. Determination of structure of NaCl by rotating single crystal method.
2 Refractive index of liquid: Specific and molar refractions, determination of refractive index of liquid by Abbe's refractometer.
3 Gels: Classification, preparation and properties, general applications of colloids.
4. Sensitivity, selectivity and specificity, advantages of organic reagents over inorganic reagents - Dimethyl glyoxime, 8-hydroxyquinoline(oxime).

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Department of Chemistry

MONTHLY TEACHING PLAN

Semester : III **Month : JUNE 2016**

Syllabus to be covered :	1) Metallurgy	: ARC
	2) Colligative properties	:SMD
	3) Acids and Bases	: CVB
	4) Orientation	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Review of steps involved in metallurgical process, thermodynamic concepts of selection of reducing agents using Ellingham diagrams.
2 Raoult's law, concept of lowering of vapour pressure, elevation of boiling point .
3 Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and bases.
4. Review of inductive, electromeric, resonance and hyperconjugation effects, activating and deactivating groups.

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MONTHLY TEACHING PLAN

Semester : III **Month : JULY 2016**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties	: SMD
3) Acids and Bases & IR Spetroscopy	: CVB
4) Orientation & Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide.
2 Depression in freezing point and osmotic pressure, derivation of Kb and Kf by thermodynamic treatment, experimental determination of molecular weight by –Landsberger's method, Beckmann's method, Berkely and Hartley method
3 Hard and soft acids and bases(HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept. IR spectroscopy: Principle, types of vibrations,
4.Orientation of substituent in aromatic compounds with different functional groups like OH, -NH2, -Cl, -NO2, -CH3, and -COOH in halogenation and nitration reactions (only electronic interpretation) Alcohols :Introduction and nomenclature of dihydric and trihydric alcohols, preparation of glycol from ethene,

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MONTHLY TEACHING PLAN

Semester : III **Month : August 2016**

Syllabus to be covered :

1) Metallurgy	: ARC
2) Colligative properties & second law of thermodynamics	:SMD
3) IR Spectroscopy	:CVB
4) Alcohols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Relative efficiency of carbon and carbon monoxide as reducing agent. Reducing agents for Chromic oxide and zinc oxide. Powder metallurgy - Production of tungsten powder from wolframite.
2 Colligative properties : Numerical problems Statement, cyclic process, Carnot's cycle, heat engine and its efficiently, Carnot's theorem, entropy and its significance.
3 identification of following organic compounds by stretching frequencies–Alkanes, alkenes, alkynes, benzene, aldehydes, ketone, alcohol, thiols, acids, esters, amines, problems based on molecular formula and stretching frequency.
4. oxidative cleavage of ethylene glycol with lead tetra acetate and per iodic acid, pinacol–pinacolone rearrangement, preparation of glycerol from propene, synthesis and uses of nitroglycerine, composition and uses of dynamite and cordite, distinction between primary, secondary and tertiary alcohols by Lucas reagent.

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MONTHLY TEACHING PLAN

Semester : III **Month : Sept 2016**

Syllabus to be covered :

1) Solvents	: ARC
2) Second law of thermodynamics	:SMD
3) Phenols	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Types, properties of good solvents, non-aqueous solvents - Liquid NH3 and liquid HF, (properties like solvation, acid-base, redox, complex formation and precipitation), water as universal solvent, leveling effect.
2. Carnot's theorem, entropy and its significance, entropy changes in reversible and irreversible process for ideas gases, free energy, dependence of free energy on pressure and temperature.
3. Phenols :Classification and nomenclature, acidic character of phenol compared to alcohol and cyclohexenol, mechanism of Fries rearrangement, Claisen rearrangement, Elbs persulphate oxidation and Lederer-Manasse reaction, synthesis and uses of n-hexyl resorcinol and picric acid, structure and uses of dettol.

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MONTHLY TEACHING PLAN

Semester : III **Month : Oct 2016**

Syllabus to be covered :

1) 2nd law of thermodynamics :SMD

2) Organometallic compounds: VAS

Synopsis of portion to be taught in the chapter during the month
1. Gibb's–Helmholtz equation, Clausius-Clapeyron equation and its applications, problems on above, partial molal quantities, chemical potential of on ideal gas
2 .Synthesis of methyl magnesium iodide and its synthetic applications in the preparation of alcohols(primary, secondary and tertiary) aldehyde, ketone, ester, carboxylic acid, amines and alkanes. Organo-lithium compounds: Preparation of Lithium dialkylcuprate and synthesis of higher alkane from it.

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MONTHLY TEACHING PLAN

Semester: IV **Month: Dec 2016**

Syllabus to be covered:
1) Environmental Chemistry :ARC
2) Bio-inorganic Chemistry :SMD
3) d & f block elements :CVB
4) Carboxylic acids :VAS

Synopsis of portion to be taught in the chapter during the month
1. : Types of pollutants, sources..
2 Essential and trace elements in biological process.
3 General characteristics of d block elements- Electronic configuration, oxidation states
4. Nomenclature, structure and bonding, acid strengths of mono, di and trichloroacetic Acids

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MONTHLY TEACHING PLAN

Semester: IV **Month: Jan 2017**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Bio-inorganic Chemistry & Electrochemistry	: SMD
3) d & f block elements	: CVB
4) Carboxylic acids	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Control measures- CO, CO2, SOx, NOx, H2S, hydrocarbons, CFC's and particulates, pesticides, and their adverse effects. Water pollution: Types of pollutants, sources and adverse effects (sewage,infectious agents).
2 Metalloporphyrins with respect to haemoglobin and chlorophyll(structure and function), biological role of Na, K, Fe and Zn. Debye-Huckel's theory, Debye–Huckel equation for strong electrolytes.
3.Metallic property, colour, reactivity, reducing property, magnetic, catalytic and complex formation properties. General characteristics of f block elements - Electronic configuration, cause and consequences of lanthanide contraction. General features of actinides electronic configuration, oxidation state, extraction of uranium from pitchblende.
4. Acid strengths of nitro, chloro and hydroxy substituted benzoic acids, mechanism of esterification and hydrolysis of ester (Aac2 and Bac2). Reactions of carboxylic acids - i) Conversion into acid derivatives(acid chlorides, amides, esters and anhydrides), ii) Curtius rearrangement, iii) Reaction with organometallic compounds and iv) Hell-Volhard-Zelinsky reaction.

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Semester: IV **Month: Feb 2017**

Syllabus to be covered:

1) Environmental Chemistry	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines	: VAS

Synopsis of portion to be taught in the chapter during the month
1.Organic chemicals and inorganic mineral, oils and sediments) Parameters of water pollution – Dissolved oxygen(DO), biological oxygen demand(BOD) and chemical oxygen demand(COD), definitions and their determinations. Treatment of sewage and industrial effluents - Preliminary, primary and secondary treatment(Aerated lagoons, trickling filters and activated sludge)
2 Debye-Huckel's theory, Debye Huckel equation for strong electrolytes..Applications of conductance measurements Determination of solubility product of sparingly soluble salts
3 Second order reaction with examples, derivation of rate constant equation of second order reaction when concentration of the reactions are equal(a=b), half life period, determination of order of reaction by a) Differential equation method b) Half life method
4. Classification, distinction between primary, secondary and tertiary amines by nitrous acid test, comparison of basic character of methyl amine, aniline and cyclohexylamine, amine salts as phase transfer catalysts, mechanism of Hoffmann rearrangement, Grabiel phthalimide reaction, diazotisation

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MONTHLY TEACHING PLAN

Semester: IV **Month: March 2017**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Aromatic amines & Ethers	: VAS

Synopsis of portion to be taught in the chapter during the month
1. Aldehydes and Ketones: Nomenclature, structure and Bonding, mechanism of nucleophillic addition reactions-Hydrogen cyanide, hydroxyl amine, acetal formation–with ethanol and ethylene glycol. Mechanism of the following reactions 1) Aldol condensation 2) Cannizzarro's reaction 3) Claisen-Schmidt reaction
2. Conductometric titrations - types of acid –base titrations and precipitation titrations c) Determination of degree of dissociation of weak electrolytes Ionic mobility.
3. Simple collision theory of reaction rates: Derivation of rate constants of unimolecular (Lindemann hypothesis) and bimolecular reaction rates, limitation of collision theory. Transition state theory, Comparison of transition state theory and collision theory, steric factor.
4. Synthetic applications of diazonium salts-reduction, Sandmeyer's reaction, coupling reactions. Nomenclature of ethers and their methods of preparation, chemical reactions - Reaction with HI, hot and cold taking symmetric and unsymmetrical ethers. Crown ethers: Definition, examples, use of crown ethers as phase transfer catalysts.

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Semester: IV **Month: April 2017**

Syllabus to be covered:

1) Aldehydes and Ketones	: ARC
2) Electrochemistry	: SMD
3) Chemical Kinetics	: CVB
4) Epoxies	: VAS

Synopsis of portion to be taught in the chapter during the month
1 1) Perkin's reaction 2) Benzoin condensation 3) Bacyer-Villiger oxidation of ketones 4) Mannich reaction, Synthesis of Coumarin and Vanillin.
2 .Transport number and its determination by Hittorff's method.
3 Chemical kinetics of complex reactions-first order reaction, opposing, consecutive and parallel reactions.
4. Epoxides: Synthesis of 1,2-epoxy ethane and 1,2-epoxycyclopentane, acid catalysed ring opening of 1,2-epoxycyclopentane in aqueous solution.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month June 2016**

Syllabus to be covered:
1) Coordination Chemistry I : AKS
2) Theory of gravimetric analysis : CVB
3) Green Chemistry : MSD
4) Microwave Spectroscopy : VSC
5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- double salts, complex salts, central metal ion, ligand, types of ligands,
2.Principles of gravimetric analysis- super saturation, von Weimar equation, conditions of precipitation, co precipitation and post precipitation.
3.The need for green chemistry and eco-efficiency, green methods, green products.
4.Classification of molecules, rotational spectra of rigid diatomic molecules.
5.Terminology and explanation of the terms involved .applications of phase rule

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: July 2016**

Syllabus to be covered: 1) Coordination Chemistry I : AKS
2) Theory of gravimetric analysis : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Microwave Spectroscopy : VSC
5) Phase rule : SMD

Synopsis of portion to be taught in the chapter during the month
1. complex ion and coordination number. IUPAC nomenclature Valence bond theory of coordination compounds with reference to [Fe(CN)6]3-, [Fe(CN)6]4-, [FeF6]3-, [Zn(NH3)4]2+, [Ni(CN)4]2- and its limitations.
2. Separation of precipitate from mother liquor, washing, properties of wash liquid, drying and ignition of precipitate, weighing form.
3. Green methods, green products, recycling of wastes, 12 principles of green chemistry. Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine,
4. Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.
5. One component system-water and sulphur systemsTwo-component systems-Bismuth-Cadmium system and KI – water system.Eutectic and freezing mixture.

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: August 2016**

Syllabus to be covered:
1) Coordination Chem and inorganic polymers : AKS
2) Alkaloids : CVB
3) Green Chemistry & Heterocyclic Chem : MSD
4) Vibrational Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
Isomerism- Ionisation, hydrate, linkage, geometrical and optical in coordination compounds with respect to coordination number 4 and 6. Inorganic polymers, Types, comparison with organic polymers, silicones.
2. Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example.
3. 12 principles of green chemistry, Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine.
4. Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule(final equations only),

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MONTHLY TEACHING PLAN

Semester: V (Paper-I) **Month: Sept 2016**

Syllabus to be covered:

1) Inorganic polymers	: AKS
2) Alkaloids	: CVB
3) Heterocyclic Chem	: MSD
4) Vibrational Spectroscopy	: VSC

Synopsis of portion to be taught in the chapter during the month
1.phosphonitrilic halides- formation, structure and applications.
2. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine.
3. synthesis of the following compounds. i) Furan, thiohene and pyrrole from 1,4- diketones. ii) Pyridine by Hantzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyndine(chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole.
4. selection rules, zero point energy determination of force constant and qualitative relation betweenforce constant and bond dissociation energies. Vibrational degrees of freedom of molecules(Linear and non linear).

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Semester: V (Paper-I) **Month: October 2016**

Syllabus to be covered:

3) Organic synthesis via enolates : MSD
4) Microwave Spectroscopy : VSC

Synopsis of portion to be taught in the chapter during the month
1. Acidity of α-hydrogens, s ynthesis of ethylacetoacetate(EAA) by Claisen condensation and its mechanism, synthesis of diethyl malonate, keto-enol tautomerism of EAA Synthesis of following compounds using EAA and diethyl malonate: i) ketones ii) carboxylic acids iii) heterocyclic compounds iv) dicarboxylic acids.
2. Classification of molecules, rotational spectra of rigid diatomic molecules, Criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), determination of bond length and moment of inertia of HCl molecule.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: June 2016**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
Alloys-Significance, types of alloys (ferrous and non ferrous alloys).
Preparation, mechanism of action and applications - DCC(Amide formation).
Thermodynamic treatment of law of mass action
Adsorption, derivation of Frendlich and Langmuir's adsorption isotherms

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: July 2016**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions : APB
3) Chemical Equilibrium : SGA
4) Surface Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
preparation (fusion and electro-deposition) and their applications. **Abrasives-** Classification, Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.
LiAlH4(reduction of aldehyde, carboxylic acid and ester), DDQ(Benzylic oxidation of tetralin, aromatisation of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols),NBS(allylic bromination),
van't Hoff reaction isotherm, relationship between Kp, Kc and Kx, variation of Kp and Kc with temperature and pressure.
Forms of Langmuir's adsorption isotherms at high and low pressure regions, BET equation (No derivation)

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Semester: V (Paper-II) **Month: August 2016**

Syllabus to be covered: 1) Industrial Chemistry I : RTK
2) Reagents & Reactions & Dyes : APB
3) Kinetics of chain reactions : SGA
4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, Anncaling of glass, types, composition and uses of glasses.
OsO4(hydroxylation of alkenes), PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols. Classification, requirement of a dye, colour and constitution. The synthesis of each of the followimg class of dyes- Azo dyes–Congo red
Examples of chain reactions, general aspects of chain reactions, chain length, chain transfer reactions
Determination of surface area using BET equation. Calalysis–Theories of catalysis-intermediate and adsorption theory,

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Sept 2016**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Dyes : APB
3) Kinetics of chain reactions & Mass Spectroscopy : SGA
4) 4) Surface Chemistry :SMD

Synopsis of portion to be taught in the chapter during the month
Cement - Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting. **Pigments** - Manufacture and relative merits of white lead
Vat dyes–Indigo,Anthraquinone dyes- Alizarin Triphenylemethane dyes Malachite green, Crystal violet Phthalein dyes-Fluorescein,Eosin; Synthesis of each dyes
chain inhibition, kinetics of branching chain reactions.
Principle, instrumentation, definitions of parent peak and base peak.
Enzyme catalysis-Michaelis–Menten equation, industrial applications of catalysis.

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MONTHLY TEACHING PLAN

Semester: V (Paper-II) **Month: Oct 2016**

Syllabus to be covered: 1) Industrial Chemistry II : RTK
2) Mass Spectroscopy : SGA

Synopsis of portion to be taught in the chapter during the month
Lithopone, Titanium white, constituents of paints and varnishes.
McLafferty rearrangement with respect to butyraldehyde.

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Semester: VI (Paper-I)

Month Dec 2016

Syllabus to be covered:

1) Coordination Chemistry II	: AKS
2) Metal ligand equilibria	: CVB
3) Carbohydrates	: MSD
4) Electronic spectrum	: VSC
5) Quantum Chemistry	: SMD

Synopsis of portion to be taught in the chapter during the month
1.Review of terms- Crystal field theory(CFT) with reference to octahedral, distorted octahedral (Jahn-Tellar distortion), tetrahedral and square planar complexes, calculation of crystal field stabilization energy
2. Stability constant, stepwise and overall formation constants, trends in step wise constants, factors affecting the stability of the metal complexes with reference to the nature of metal ion and ligand.
3. Haworth and conformational formulae of glucose and fructose, mutarotation and its mechanism, osazone formation, Killani's synthesis, Ruff's degradation
4. Concept potential energy curves for bonding and anti-bonding molecular orbitals, qualitative description of selection rules, energy levels and respective transitions,
5. Photoelectric effect - Einstein's photoelectric equation, wave particle duality, de-Broglie hypothesis

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Jan 2017**

Syllabus to be covered:
1) Coordination Chemistry II : AKS
2) Metal ligand equilibria : CVB
3) Carbohydrates : MSD
4) Electronic spectrum, Physical properties and molecular structure : VSC
5) Quantum Chemistry : SMD

Synopsis of portion to be taught in the chapter during the month
1. factors affecting 10Dq, consequences of crystal field splitting on ionic radii of M+2 ions, enthalpy of hydration of M+2 ions, explanation of colour and magnetic properties of magnetic complexes, limitations of crystal field theory, calculation of magnetic moment using Gouy's method
2. **Chelates** - definition, characteristics, factors influencing the stability of metal chelates and importance of chelates.
3. epimers and epimerisation with respect to monosaccharides, interconversions of glucose and fructose.
4. Frank–Condon principle. **Physical properties and molecular structure** Introduction-dipole moment, induced dipole moment, measurement of dipole moment by temperature variation method and its applications.
5. de-Broglie equation(derivation), experimental verification- Davisson-Germer experiment.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Feb 2017**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : MSD
4) Polymers : VSC

Synopsis of portion to be taught in the chapter during the month
1. Introduction, classification of terpenes, Ingold's isoprene rule, constitution of citral with synthesis
2. Introduction, classification of organotransition metal complexes, 18 electron rule with respect to $[Fe(CO)5]$, $[Ni(CO)5]$, $[Mn(CO)5]^+$,
3. Vitamins: Classification and importance of vitamin-A, B6, B12, C, D and E.
4.Introduction, classification, determination of molar masses of macromolecules by viscometry and Donnan membrane equilibrium.

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MONTHLY TEACHING PLAN

Semester: VI (Paper-I) **Month: Mar 2017**

Syllabus to be covered: 1) Terpenoids : RTK
2) Organometallic Chemistry : CVB
3) Vitamins & Hormones : MSD

Synopsis of portion to be taught in the chapter during the month
1. synthesis of α and β ionones, synthesis of α-terpeniol.
2. ferrocene, structure andbonding in metal olefins (Zeise's Salt).
3. Synthesis of Vitamin-C from D(+)-glucose, synthesis of vitamin-A by Vandropetal.

HEAD
Department of Chemistry

SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Dec 2016**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Soil analysis	: SMD
3) Chromatography	:RTK
4) Chemotherapy	:APB

Synopsis of portion to be taught in the chapter during the month
1. Reversible and irreversible cells, EMF of a chemical cell and its measurement by potentiometer, standard cell (Weston standard cell).
2. Macro nutrients, trace metals and organic matter in soil.
3. Principle, types, stationary and mobile phases, physical factors of separation, brief account of paper chromatography, calculation of Rf value, brief account of column chromatography and its applications.
4. Introduction, requirement of an ideal synthetic drug, classification, synthesis and uses of the following- Antipyretics -antipyrine, paracetamol Anaesthetics-novacaine(local) and pentothal sodium(general) Antihistamines -chlorpheniramine maleate(CPM)

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Jan 2017**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Soil analysis	: SMD
3) Chromatography	:RTK
4) Chemotherapy	:APB

Synopsis of portion to be taught in the chapter during the month
1. Types of electrodes - Reference electrode, calomel electrode, derivation of Nernst equation for emf of a cell.
2. Determination of pH, Determination of nitrogen by alkaline permanganate method and phosphorus by Bray's and Olsen's method present in the soil.
3. Principle, Limitations, Instrumentation, Flame photometric determination of Na and K.
4. Antimalariuls–paludrine, chloroquine Antibiotics-chloromycetin, penicillin, tetracyclin Para pharmaceutical reagents–Benedict's reagent, sodium citrate, Barfoed reagent

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Feb 2017**

Syllabus to be covered:

1) Electromotive Force	: SGA
2) Photochemistry	: SMD
3) Chromatography	:RTK
4) Soaps & Detergents	:APB
5) Electronic spectra of transition Metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1. concentration cells– with and without transference, liquid junction potential and its derivation, salt bridge.
2. Photochemical reactions, laws of photochemistry – Beer's law, Lambart's Law, Beer-Lambart's Law
3. Principle and applications of thermogravimetric methods (TG and DTA).
4. Soaps - Introduction, manufacture by modern process, cleaning action of soap. Detergents - anionic, cationic, nonionic, with suitable examples, distinction between soaps and detergents, emulsifiers, stabilisers and builders.
5. Russel-Sandar's coupling in defining ground states of spectrochemical series

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: VI (Paper-II) **Month Mar 2017**

Syllabus to be covered:

1) Reaction mechanisms	:CVB
2) Photochemistry	: SMD
3) Chromatography	:RTK
4) NMR spectroscopy	:APB
5) Electronic spectra of transition Metal complex	:AKS

Synopsis of portion to be taught in the chapter during the month
1. a) Beckmann rearrangement b) Favorskii rearrangement
2. fluorescence, phosphorescence, photosensitization and chemiluminescence.
3. Electrogravimetric determination of Copper.
4. TMS as internal standard-advantages, interpretation of PMR spectra of simple organic molecules such as ethyl bromide
5 selection rule for d-d transitions, Orgel- energy level diagram-d1 and d2 states

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SKE Society's
GOVINRAM SEKSARIA SCIENCE COLLEGE
Department of Chemistry

MONTHLY TEACHING PLAN

Semester: VI (Paper-II)

Month Apr 2017

Syllabus to be covered:
1) Reaction mechanisms :CVB
2) NMR spectroscopy :APB
3) Electronic spectra of transition Metal complex :AKS

Synopsis of portion to be taught in the chapter during the month
1.a) Benzidine rearrangement b) Benzillic acid rearrangement
2. n-propyl bromide, iso propyl bromide, ethanol, acetaldehyde and benzene.
3. Discussion of the electronic spectrum of [Ti(H2O)6]3+ complex ion

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Department of Chemistry

DEPARTMENT OF BOTANY

MONTHLY TEACHING PLAN

2015-2021

B.Sc. 1st semester monthwise syllabus 2015-16

June 2015

1. **Tissues**- meristems , types , characters
2. **Internal structure of primary plant body**- root (dicot & monocot)
3. **Anther** – development
4. **Fertilization** – pollen –pistil interaction

July 2015

1. **Tissues**- histological organisation of root & shoot apices theories.
2. **Permanent tissues**- simple & complex.
3. **Internal structure of primary plant body** -stem & leaf (dicot & monocot)
4. **Anther** -microsporogensis & male gametophyte, .MGU.
5. **Fertilization** –entry of pollen tube into the stigma, style & embryosac.

August 2015

1. Types of vascular bundles, root – stem transition.
2. **Secondary growth** – root & stem
3. Palynology- applications of palynology in taxonomy, coal, oil exploration & forensic science.
4. **Ovule** – development
5. **Fertilization** –double fertilization.
6. **Endosperm** – types.

IQAC Coordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

September 2015

1. **Tissue systems**- dermal, secretary, mechanical, nectory, laticiferous & oil Glands.
2. **Abnormal secondary growth** – general account with the examples Bignonia , Boerhaavia. ,Dracaena & Beetroot.
3. **Ovule** –types, structure of anatropus ovule, megasporogenesis, development of gametophyte-monosporic, bisporic
4. Embryogeny – dicots (crucifer) & monocot (grass).

October 2015

1. **Wood anatomy**- General account, ring porous, diffuse porous, distribution & types of wood parenchyma, Tracheary elements, fibre types.
2. Development of gametophyte- tetrasporic types (Peperomia, Drusa, Fritillaria & Adoxa.) & FGU.
3. A brief account of polyembryony & apomixis & their significanc

B.Sc.3rd semester monthwise syllabus 2015-16

June 2015

1. Classification of living organisms (Whittaker 's five kingdom system) with reference to position of plants.
2. **Algal diversity-** Habitat
3. **Fungi-** Habitat, habit
4. **Bryophytes-** Habitat, habit and classification (Smith and ICBN)

July 2015

1. **Algal diversity** classification by Fritsch (Details uplo class level)
   Reproduction:vegetative, asexual and sexual with examples
2. **Fungi-** Reproduction :vegetative, asexual and sexual
   Economic importance of fungi
3. **Bryophytes-**Evolution and origin of sporophyte and gametophyte
   Types of reproduction, schematic life cycle
4. **Paleobotany-** Geological time scale and fossilization
   Rhynia, calamitis

August 2015

1. Pigmentation and economic importance of algae
   Origin and evolution of sex in algae
2. Economic importance of fungi
3. General characters of lichens

4.**Pteridophyte**-Habitat, habit and classification

Reproduction, stelar evolution

5 **Paleobotany**-Lepidodendron, Lepidocarpon , Lepidostrobus, Lygenopteris

6 **Virus**-general characters,classification,structure of HIV ,trasmission and reproduction.

September 2015

1. **Pteridophyte**-heterospory and seed habit

Evolution of sporophyte, general life cycle

2 **Gymnosperms**- Habitat, habit, general characters, classification

3 **Bacteria**–general characters,classification,ultracture,mode of nutrition and reproduction.

October 2015

1 **Gymnosperms**- reproduction, Life cycle and anatomy

2 .**Plant pathology** : common diseases , symptoms, pathogens and Control measures of following diseases: Sandal spike ,TMV,BBT, citrus canker, late blight of potato, white rust, loose smut, rust on wheat and tikka disease of ground nut.

B.Sc.5th semester paper 1 month wise syllabus 2015-16

June 2015

1. **Plant Breeding:** History and objectives.
2. **Plant Tissue Culture:** Scope and Significance.
3. **Nursery management** – Introduction, types of nurseries and cultural practices.
4. **Harvest Technology:** Management for fruits.

July 2015

1. **Plant Breeding:** History and objectives. Hybridization- inter specific and inter generic. Germ plasm and its maintenance
2. **Plant Tissue Culture:** Basic Aspects. Cellular totipotency, differentiation.
3. **Nursery management** –Seed (propagule) collection, selection of propegule material, storage and treatment.
4. **Harvest Technology:** Management for flowers and medicinal plants

   Artificial ripening, maturity indices, methods of picking.

   Post harvest technology and management of fruits.

August 2015

1. **Plant Breeding:** Pollen Bank, Quarantine method.
2. **Green House Technology** – Introduction, advantages and limitations.
3. Post harvest technology and management of fruits, flowers and medicinal plants – grading, processing, storage and packing.

4. **Nursery management**-Manures, fertilizers and pesticides.

Methods of irrigation – drip, sprinkler and flood

5. **Plant Tissue Culture**, morphogenesis, Biology of agro bacterium, marker genes.

September 2015

1. **Plant Tissue Culture:** transgenic plants.

2. **Introduction to Horticulture branches and importance.**

Methods of propagation - vegetative – rhizome, bulb, corm and sucker (natural). Artificial- cutting ,layering, grafting and budding.

3. Types of Green Houses- Green House structure, principle

i. Site selection, orientation ii. Structure material

iii. Covering material iv. Temperature and humidity control

4. **Weed Management :** Introduction and need.

Invasive weeds – concept and causes of their dominance.

Weed control – physical, chemical

October 2015

1. Landscaping as a means of plant resources conservation
2. Bonsai – methods and importance.
3. Green house technology as applied to ornamental, vegetable, fruit and Medicinal
4. Weed control – physical, chemical and biological methods.
   Sustainable use of weeds.

B.Sc.5th semester paper 2 month wise syllabus 2015-16

June 2015

1. **Plant and environment:** Atmosphere (gaseous composition), water (properties of water cycle).
2. **Population ecology:** Growth curves: ecotypes, ecads.
3. **Conservation of Natural resources:** Different types of natural resources and their conservation.
4. **Pollution:** Introduction, causes, and control measures of Water Pollution.

July 2015

1. **Plant and environment:** light (global radiation, photo synthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.
2. Community ecology: Community characteristics, frequency, density, cover, life forms, biological spectrum; ecological succession-hydrach and xerarch.
3. Forest and Forest Management: Forest and its ecological significance, deforestation, forest management and social furestry. Natural depletion of vegetation endangered and threatened economic plants of India and red data book.
4. **Pollution:** Introduction, causes, effects and control measures of Air pollution, Soil pollution, Acid rain, Global warming, Ozone depletion, Fall out of nuclear explosion.

August 2015

1. Morphological, anatomical and physiological responses of plants to water (hydrophytes xerophytes and epiphytes), temperature (thermoperiodicity and vernalization).

2. **Ecosystems**-Structure; abiotic and biotic components; food chain, food web, ecological pyramids, energy flow.

3. Sewage water and waste water types.

Methods of effluent treatment of industrial waste water.

September 2015

1. Morphological, anatomical and physiological responses of plants to light (photoperiodism, hellophytes and sciophytes) and salinity.

2. **Phytogeography**: Botanical regions of world. Vegetation types of Karnataka

3. Man and biosphere programme(MAB).

Biodiversity:significance, types, depletion, conservation of biodiversity.

4. Sludge disposal and its care related to environment.

October 2015

1. Vegetation types of India.

2. Health hazardous problems faced by industrial workers and its preventive measures.

3. Biodiversity: sovereign rights and intellectual property rights.

B.Sc.2nd semester month wise syllabus 2015-2016

December 2015

1. **Water Relations :** solutions, suspensions & colloids, true solutions, percentage, molarity, moiar , buffer, molal solutions, pH , colloids, emuision, and gels.

2. **Photosynthesis:** Photosynthetic pigments, action spectrum,concept two photosystems
3. **Thermodynamics:** Principles, free energy, energy rich bonds phosporyl group transfer and ATP.
4. **General account:** Pharmacognosy & its importance in modern medicine ,Crude drugs-classification of drugs,chemical & pharmacological drugs evaluation –organolaptic.

January 2016

1. Permeability, diffusion, imbibition, osmosis: membranes, endosmosis, exosmosis, osmotic pressure, turgor pressure (TP), wall pressure (WP), relation between OP,DPD & TP, concept of waterpotential, plasmolysis,deplasmolysis,significance of osmosis & imbibition.

2. Importance and sources of water, Active and Passive water absorption.
3. **Mechanism of ascent of sap :** root pressure theory and cohesion tension (Dixon & Jolly) theory.
4. **Photosynthesis:**Red drop & Emerson enhancement effect, photo phosphorylation, Calvin cycle, C4 & CAM path way.
5. **Enzymes:**Classification , nomenclature (IUBMB) and properties; co-factors and co-enzymes, isozymes, mechanism of enzyme action.
6. Crude drugs-classification of drugs,chemical & pharmacological drugs evaluation –microscopic, chemical, physical & Biological.
7. **Secondary metabolites:** Definition of secondary metabolites & difference with primary metabolites. Interrelationship of basic metabolic pathway with secondary metabolite Biosynthesis (outline only),major types – terpenoids, phenolics, & their protective action

against pathogenic microbes & herbivores

February 2016

1. **Transpiration:** types, mechanism, theories of opening & closing of stomata, factors affecting rate of transpirations, antitranspirants and guttation.
2. **Mineral nutrition** : macro and micronutrients and their role & deficiency symptoms.
3. **Photosynthesis:**photorespiration and factors affecting photosynthesis.
4. **Respiration:** aerobic, anaerobic & fermentation, glycolysis.
5. Enzyme inhibition, enzyme kinetics (Michaelis Menten equation).
6. **Proteins:** structure and classification of amino-acids.
7. **Secondary metabolites:** Interrelationship of basic metabolic pathway with secondary metabolite Biosynthesis (outline only),major types – flavonids, alkaloids & their protective action against pathogenic microbes & herbivores.

March 2016

1. Nitrogen fixation, importance of nitrate reductase, its regulation and ammonium assimilation.
2. **Growth:** Photomorphogenesis; photoperiodism ,phytochrome, vernalization & concept of biological clock, seed dormancy:- causes and methods of breaking dormancy. Stress physiology:- concept and plant responses to water, salt and temperature stresses
3. Respiration: Kreb's cycle, electron transport system, redox potential, oxidative phosphorylation, pentose phosphate pathway, respiratory quotient (RQ) and factor affecting respiration.
3. Primary, secondary, tertiary and quaternary structure of proteins.
4. Carbohydrates: structure of mono, di and polysaccharides, stereoisomers, enantiomers and epimers.
5. Pharmacologically active constituents: Source plants (one example) parts used & uses of 1.Steroids (diosgenin, digitoxin)

2.Tannins (catechin), resins (gingerol, curcminoides)

April 2016

1. Growth regulators: physiological roles of Auxins, Gibberellins, Cytokinins, ABA, Ethylene & growth inhibitors.
2. Lipids: structure of lipid (simple and compound) phospho and glycolipids, fatty acid, saturated and non-saturated.
3. Pharmacologically active constituents: Source plants (one example) parts used & uses of Alkaloids(quinine, strychnine,reserepine, vinblastin)

B.Sc.4th semester month wise syllabus 2015-2016

December 2015

1. **Angiosperms :** origin and evolution.
2. **Classification of Angiosperms :** systems proposed by Benthom and Hooker and Engler prantl. Their salient features, merits and demerits. Major contributions of cytology (cytotaxcnomy)
3. **Food plants:** Rice, Wheat

January 2016

1. **Angiosperm taxonomy :** Brief history, botanical nomenclature, principles and rules, taxonomic ranks, type concept and principle of priority
2. Phytochemistry (chemotaxonomy) and taximetrics (numerical taxonomy) to taxonomy
3. **Diversity of flowering plants as illustrated by members of the following families:** Magnoliaceae ,Anonaceas, Brassicaceae, Malvaceae, Sterculiaceae, Tiliaceae, Rutaceae, Rhamnaceae, Anacardiaceae,Fabaceae
4. **Fibres:** Cotton,Jute,Agave and Deccan hemp
5. **Vegetable oils:**Ground nut,Sunflower,Coconut, Palm oil and Castor

February 2016

1. **General account and sources of fire wood:** Timber,Teak and Sissoo

Paper & pulp: Bamboo & Eucalyptus

Spices: Saffron, Nutmeg, Ginger, Cinnamom and Cardamom

Beverages: Tea, Coffee &Cocoa

Rubber: Hevea sp.

2.Family-Myrtaceae, Combretaceae, Lythraceae, Cucurbitaceae, Apiceae, Rubiaceae, Asteraceae, Sapotaceae, Apocyanaceae Asclepiadaceae, Convolvulaceae, Solanaceae,

March 2016

1. Family-Scrophulariaceae, Acanthaceae, Verbenaceae, Lamiaceae, Nyctaginaceae Amaranthaceae, Euphorbiaceae,Urticaceae, Orchidaceae.
2. **Ethno medicine:** scope, interdisciplinary nature, distinction of ethno medicine from folklore medicine, outlines of Ayurveda Sidda, Unani & Homeopathic system of traditional medicine. Role of AYUSH, NMPB, CIMAP& CDRI
3. **Plants in primary health care:** common medicinal plants-

Tippateega (Tinospora cordifolia), Tulsi (Oscimum sanctum) Pepper (Piper longum), Karaka (Terminalia chebula), Kalabanda (Aloe-vera) and Turrmeric (Curcuma longa).

April 2016

1. Family-Amaryllidaceae ,Liliaceae, Arecaceae and Poaceae.
2. Traditional medicine Vs modern medicine:study of selected plants used in traditional medicine as resource (active principles, structure, usage,& pharmacogical action) of modern medicine : Ashwagandha (Withania somnifera), Sarpagandha (Rauwolfia serpentina)and Brahmi (Bacopa monneri).

B.Sc.6th semester paper-1 month wise syllabus 2015-16

December 2015

1. **The cell:** General organization of prokaryotic and Eukaryotic cells.
2. Ultra structure & functions of Nucleus.
3. **Genetics:** Mendelism (Laws of inheritance)

January 2016

1. Ultra structure and functions of plastids, Mitochondria, Golgi complex, Endoplasmic reticulum, Lysosomes, Peroxisomes & Vacuoles.
2. Mendelism (Monohybrid, Dihybrid and trihybrid Experiments).Gene interaction (Allelic – incomplete dominance, co-dominance.

February 2016

1. Ultra structure & functions of Plasma membrane & Cell wall.
2. Morphology of Chromosomes: Number, size, shape, types, centromere, SAT-chromosomes.
3. Non – allelic – Complementary, Supplementary, Epistesis) Linkage &crossing over,Alleles, Multiple alleles, Sex determination, Sex linked inheritance, Mutations, Problems related to the above topics.

March 2016

1. Ultra structure of chromosome, giant Chromosomes, Ploidy, chromosomal aberrations.
2. **Cell division** : Mitosis and Meiosis.

April 2016

1. **Cell cycle**:regulation of cell cycle.
2. **Evolution** : Origin of life, Lamarckism, Darwinism, Mutational and Modern concepts of evolution

B.Sc.6th semester paper-2 month wise syllabus 2015-16

December 2016

1. Nucleic Acids: DNA & RNA, occurrence, types
2. Gene concept, Genetic code.
3. Bioinformatics: Brief concept on Genomics and proteomics.

January 2016

1. Nucleic Acids: DNA & RNA, chemical Compositions

   Experimental evidences for DNA as genetic material.

   Structure of DNA, Replication,semiconservative method.

2. protein synthesis
3. Immunology :immuno-systems, Immunotechniques in

   Agriculture,medicine and Industries,ELISA method to detect

   Plant diseases & monoclonal antibodies
4. Bioinformatics: Brief concept on Genomics and proteomics.

February 2016

1. RNA and types, post transcription changes.
2. Regulation of gene expression in prokaryotes&eukaryotes.
3. Biotechnology: Basic concepts, principles and scope.
4. Microbial genetic manipulation: Bacterial transformation,

   Selection of recombinant and transformants.

March 2016

1. Recombinant DNA technology:

   Enzyme,vector(plasmid PBR322),marker gene,

   Steps of cloning technique,PCR and its application.

2.Genetic engineering of plants:

Aims,strategies for development of transgenics (with suitable example),Agrobacterium- The natural genetic engineer.

April 2016

1. Genomic DNA and cDNA library.
2. Genetic improvement of industrial microbes, nitrogen fixers & fermentation technology
3. T-DNA and transposon Mediated Gene tagging,chloroplast transformation and it's utility,intellectual Property rights,possible ecological risks and ethical concerns.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Embryology: Pollen- pistil interaction
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Entry of pollen in to the stigma, style and emoryo sac.
TOPIC TO BE COVERED IN THE MONTH OF September2017
Endosperm: Types. Embryogeny – Dicots (Crucifer) and monocot (grass).
TOPIC TO BE COVERED IN THE MONTH OF October 2017
A Brief account of polyembryony and apomixes and their significance.

CLASS – B. Sc V SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant and environment: Atmosphere, water cycle, role and properties of light, temperature and soil.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF September 2018
Pollution: Water, air, and soil pollution. Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Sewage water and waste water, water types. Method of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. Y. B. Dalvi
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Embryology: Anther- Development, Microsporogenesis and male gametophyte.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
MGU. Palynology application of palynology in taxonomy, coal, oil exploration and forensic science.
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Ovule – development, types structure.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
Development of gametophyte.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Gymnosperms: Habitat Habit, general characters, classification and reproduction.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Gymnosperms: Life cycle and anatomy
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Paleeobotany: Geological time scale and fossiization.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
Rhynia, calamitis, lepidodendron, lepidocarpon, lepidostrobus, lygynopteris.

CLASS – V SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Introduction to Horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Nursery management and importance.
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Harvest technology: Flower, Fruit plants management, packaging. Post-harvest technology and management.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
weed management and control.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. B.R. Sholapurmath
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH JUNE 2016 to JULY 2017
Plant anatomy: Tissues- types organisation and theories.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Permanent tissues- Simple and Complex
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Types of vascular bundles.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBR 2017
Tissue system, Secretory- Nectery, lactiferous and oil glands.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Fungi: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF September 2017
econornic importance of fungi. General characters of lichens.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
Plant pathology- common disease, symptoms, pathogen and control measure.

CLASS – V SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Introduction to horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Horticulture practice- method of propagation.
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Nursery management -methods of irrigation.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
Seed propagule, collection storage and treatment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. P. M. Bhat

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Algae: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST Y 2017
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Pigmentation &economic importance of algae.Origin evaluation of sex in algae.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Virus and Bacteria- General characteristics, classification structure, nutrition

CLASS – V SEMESTER PAPER- I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant breeding. History, Objectives
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Selection, Hybridization.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Mutational and polyploidy breeding.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Germ plasm – Maintainace importance, Pollen bank, Quarantine method.

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Conservation of natural resources: Different types of natural resources and their conservation.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Forest and forest management.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Wild life management in India
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Energy resources. Biodiversity conservation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Mrs. Pradnya M. Ankalkhope.

CLASS – B. Sc I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant Anatomy: Root, stem and leaf
TOPIC TO BE COVERED IN THE MONTH OF AUGUST2017
Secondary Growth – root and stem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Abnormal Secondary Growth – Bignonia, Boerhrhavia. Dracaena Beetroot.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Wood anatomy- general account, types.

CLASS – III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Bryophytes: Habitat, Habit classification. Reproduction and types.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Evolution and origin. Schematic life cycle.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Pteridophytes:Habitat, Habit classification.Reproduction &stelar evolution.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Evaluation of sporophyte, general life cycle.

CLASS – V SEMESTER PAPER- I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Green house introduction advantage limitation.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Types of green house and structure.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Green house technology applied to ornamental and fruit plants.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Green house technology applied to ornamental vegetable.

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Population ecology and ecosystem: growth curves and ecotypes.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Structure of ecosystem.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Abiotic and biotic components. Food chain, food web energy flow
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Botanical regions of word, Vegetation types – Karnataka and India

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Thermodynamics: Principles, free energy, energy rich bonds phosporyl group transfer and ATP.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Enzymes: Classification, nomenclature (IUBMB)and properties; co-factors and coenzymes, isozymes, mechanism of enzyme action, enzyme inhibition, enzyme kinetics.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Proteins: structure and classification of amino-acids, primary, secondary, tertiary and quaternary structure of proteins.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Carbohydrates: structure of mono, di and polysaccharides, stereoisomers, enantiomers and epimers.Lipids: structure of lipid (simple and compound) phospho and glycolipids, fatty acid, saturated and non-saturated.

CLASS – B. Sc VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Recombinant DNA technology and Bioinformatics: Enzyme, vector, marker gene, Steps of cloning technique, PCR and its application.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Genomic DNA and cDNA library. Brief concept on Genomics and proteomics.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Biotechnology and Genetic engineering of plants: Basic concepts, principles and scope. Aims, strategies for development of transgenic plants.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Agrobacterium-The natural genetic engineer. T-DNA and transposon mediated Gene tagging, Intellectual Property rights, possible ecological risks and ethical concerns.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Shri. Y. B. Dalvi

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Water Relations: solutions, suspensions & colloids, true solutions, percentage, molarity, molar, buffer, molal solutions, pH, colloids, emulsion, and gels. Permeability, diffusion, imbibition, osmosis, membranes, endosmosis, exosmosis, osmotic pressure, turgor pressure (TP), wall pressure (WP), relation between OP, DPD & TP
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
concept of water potential, plasmolysis, deplasmolysis, significance of osmosis & imbibition. Importance and sources of water, Active and Passive water absorption. Mechanism of ascent of sap: root pressure theory and cohesion tension (Dixon &Jolly) theory.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Transpiration: types, mechanism, theories of opening & closing of stomata, factors affecting rate of transpirations, antitranspirants and guttation. And Mineral nutrition
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Growth: Photomorphogenesis: photoperiodism, phytochrome, vernalization & concept of biological clock, seed dormancy: - causes and methods of breaking dormancy.

CLASS – B. Sc IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Medicinal botany- Common medicinal plants in primary health care: Tippateega,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Tulsi Kalabanda Turmeric Ashwagandha and Sarpagandha.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Morphology of Angiosperms: Study of stems and its modifications. Leaf- types, stipules
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Phyllotaxy and their modifications.

CLASS – VI SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Cell Biology: The cell: General organization of prokaryotic and Eukaryotic cells.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Ultra-structure & functions of Nucleus, Plastids, Mitochondria, Golgi complex, Endoplasmic reticulum, Lysosomes, Peroxisomes & Vacuoles.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Evolution: Origin of life, Lamarckism, Darwinism,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Mutational and Modern concepts of evolution.

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Microbial genetic manipulation and Immunology: Microbial genetic manipulation.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Bacterial transformation, selection of recombinant And transformants, genetic improvement of industrial microbes
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
nitrogen fixers & fermentation technology. Immunology: Immuno-systems, Immuno techniques in Agriculture.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
ELISA method to detect Plant diseases & Monoclonal antibodies.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Mrs. B.R. Sholapurmath

CLASS – IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Morphology of Angiosperms: Study of stems and its modifications, Leaf- types stipules, Phyllotaxy and their modifications. Study of Inflorescences, flowers and fruits. Angiosperm systematics: Botanical nomenclature.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Classification of Angiosperms: APG classification. Contributions of Cytology, Phytochemistry and Taximetrics to taxonomy.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Origin & Distribution, Family, Botanical name and utility of Food plants Fibres.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Oil yielding plants Paper & pulp Bamboo & Eucalyptus Spices, Beverages, Rubber.

CLASS – B. Sc VI SEMESTER Paper I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Morphology of Chromosomes: Number, size, shape, types, centromere, SAT chromosomes.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Ultra-structure of giant Chromosomes, Ploidy and chromosomal aberrations.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Cell division: Mitosis and Meiosis in plants.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Cell cycle: regulation of cell cycle.

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Nucleic Acid: DNA & RNA, occurrence, types and chemical compositions,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Gene Expression: Experimental evidences for DNA as genetic material. Structure of DNA.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Replication, Semiconservative method, RNA and types, post transcription changes.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Gene concept, Genetic code & protein synthesis.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Mr. P.M. Bhat
CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
General account: Pharmacognosy & its importance in modern medicine, Crude drugs, Classification of drugs- Chemical & Pharmacological. Drug evaluation –Organoleptic, Microscopic, Chemical, Physical & Biological
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Secondary metabolites: Definition of secondary metabolites & difference with primary metabolites. Interrelationship of basic metabolic pathway with secondary metabolite.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Biosynthesis, major types – terpenoids alkaloids & their protective action against pathogenic microbes & herbivores.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Pharmacologically active constituents: Source plants parts used & uses of 1.Steroids 2. Tannins, resins 3. Alkaloids

CLASS – IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Classification of Angiosperms: Systems proposed by Bentham and Hooker, Engler Prantl Their salient features, merits and demerits
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Diversity of flowering plants as illustrated by members of the following families: Annonaceae, Brassicaceae, Malvaceae, Rutaceae, Rhamnaceae, Fabaceae, Myrtaceae,
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Combretaceae, Cucurbitaceae, Apiceae, Rubiaceae, Asteraceae, Apocyanaceae, Asclepiadaceae, Convolvulaceae,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Solanaceae, Acanthaceae, Verbenaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae, Arecaceae and Poaceae.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Mrs. P.M. Ankalkhope

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Photosynthesis: Photosynthetic pigments, action spectrum, concept of two photosystems: Red drop & Emerson enhancement effect
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Photophosphorylation, Calvin cycle. C4 & CAM path way, photorespiration and factors affecting photosynthesis.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Respiration: aerobic, anaerobic & fermentation, glycolysis, Kreb's cycle, electron transport system, redox potential, oxidative phosphorylation, pentose phosphate pathway.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Respiratory quotient (RQ) and factor affecting respiration Nitrogen fixation, importance of nitrate reductase, its regulation and ammonium assimilation.

CLASS – VI SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Genetics: Mendelism Laws of inheritance, Monohybrid, Dihybrid Experiments.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Gene interaction (Allelic – incomplete dominance, co-dominance Non – allelic – Complementary
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Supplementary, Epistasis Linkage & crossing over, Alleles, Multiple alleles, Sex determination,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Sex linked inheritance. Mutations, Problems related to the above topics

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Regulation of gene expression in prokaryotes.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Regulation of gene expression in prokaryotes
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Regulation of gene expression in eukaryotes.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2016
Embryology: Pollen- pistil interaction
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Entry of pollen in to the stigma, style and embryo sac.
TOPIC TO BE COVERED IN THE MONTH OF September2018
Endosperm: Types. Embryogeny – Dicots (Crucifer) and monocot (grass).
TOPIC TO BE COVERED IN THE MONTH OF October 2018
A Brief account of polyembryony and apomixes and their significance.

CLASS – B. Sc V SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant and environment: Atmosphere, water cycle, role and properties of light, temperature and soil.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF September 2018
Pollution: Water, air, and soil pollution. Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Sewage water and waste water. water types. Method of effluent treatment of industrial waste water. sludge disposal and its care related to environment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Shri. Y. B. Dalvi
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Embryology: Anther- Development, Microsporogenesis and male gametophyte.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
MGU. Palynology application of palynology in taxonomy, coal, oil exploration and forensic science.
TOPIC TO BE COVERED IN THE MONTH OF September 2018
Ovule – development, types structure.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Development of gametophyte.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Fungi: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF September 2018
economic importance of fungi. General characters of lichens.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Plant pathology- common disease, symptoms, pathogen and control measure.

CLASS – V SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Green house introduction advantage limitation. Types of green house and structure.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Green house technology applied to ornamental and fruit plants. Green house technology applied to ornamental vegetable
TOPIC TO BE COVERED IN THE MONTH OF September 2018
Introduction to Horticulture, Nursery management and importance.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Harvest technology: Flower, Fruit plants management, packaging. Post-harvest technology and management. weed management and control.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Shri. B.R. Sholapurmath

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Gymnosperms: Habitat Habit, general characters, classification and reproduction.
TOPIC TO BE COVERED IN THE MONTH OF August 2017
Gymnosperms: Life cycle and anatomy
TOPIC TO BE COVERED IN THE MONTH OF September 2017
Palaeobotany: Geological time scale and fossilization.
TOPIC TO BE COVERED IN THE MONTH OF October 2017
Rhynia, calamitis, lepidodendron, lepidocarpon, lepidostrobus, lygynopteris.

CLASS – V SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Introduction to horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2018
Horticulture practice- method of propagation.
TOPIC TO BE COVERED IN THE MONTH OF September 2018
Nursery management -methods of irrigation.
TOPIC TO BE COVERED IN THE MONTH OF October 2018
Seed propagule, collection storage and treatment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Shri. P. M. Bhat

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Algae: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2018
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBEER 2018
Pigmentation &economic importance of algae. Origin evaluation of sex in algae.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2018
Virus and Bacteria- General characteristics, classification structure, nutrition

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Conservation of natural resources: Different types of natural resources and their conservation.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2018
Forest and forest management.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2018
Wild life management in India.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2018
Energy resources. Biodiversity conservation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Mrs. P.M. Ankalkhope

CLASS – B. Sc I Semester

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Plant Anatomy: Root, stem and leaf
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2018
Secondary Growth – root and stem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2018
Abnormal Secondary Growth – Bignonia, Boerhrhavia. Dracaena Beetroot.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2018
Abnormal Secondary Growth -Dracaena Beetroot.

CLASS – III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Bryophytes: Habitat, Habit classification. Reproduction and types.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Evolution and origin. Schematic life cycle.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Pteridophytes: Habitat, Habit classification. Reproduction &stelar evolution.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Evaluation of sporophyte, general life cycle.

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Population ecology and ecosystem: growth curves and ecotypes.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2017
Structure of ecosystem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2017
Abiotic and biotic components. Food chain, food web energy flow
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2017
Botanical regions of word, Vegetation types – Karnataka and India

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Miss. Priyanka S. Kundekar

CLASS – B. Sc I Semester

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Plant Anatomy: Root, stem and leaf
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2018
Secondary Growth – root and stem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2018
Abnormal Secondary Growth – Bignonia, Boerhrhavia. Dracaena Beetroot.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2018
Wood anatomy general account, types.

CLASS – V SEMESTER PAPER- I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2017 to JULY 2018
Plant breeding: History, Objectives, Selection, Hybridization, Mutational and polyploidy breeding.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2018
Germ plasm – Maintainace importance, Pollen bank, Quarantine method.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2018
PLANT TISSUE CULTURE – Scope and significance, basic aspects, cellular totipotency.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2018
Differentiation and morphogenesis.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2017-2018)

NAME OF THE STAFF: Y.B.DALVI

CLASS B.SC 2nd SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2017 to JANUARY 2018
UNIT IV
THERMODYNAMICS: Principles, Free energy, energy rich bonds phosphoryl group transfer and ATP. Enzymes: Classification, nomenclature and properties, cofactors and coenzymes, isozymes,mechanism of enzyme action, enzyme inhibition, enzyme kinetics .
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2018
UNIT IV
PROTIENS: Structure and classification of amino acid, primary, secondary, tertiary and quaternary structure of proteins.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2018
UNIT IV
Carbohydrates: Structure of mono, di and polysaccharides, stereoisomer, enantiomers and epimers.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2018
UNIT IV
LIPIDS: Structure of lipid (simple and compound) phospholipid, glycolipid, fattyacids, saturated and nonsaturted.

CLASS B.SC 4th SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2017 to JANUARY 2018
UNIT 2
Morphology of Angiosperms: study of roots, stems and leaves
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2018
UNIT 3
Study of Inflorescence and flower.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2018
UNIT IV
Study of fruit, angiosperm origin and evolution
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2018
UNIT IV
Angiosperm taxonomy.

CLASS B.SC 6TH SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2017 to JANUARY 2018
UNIT V
Immunology system, ELISA, Monoclonal antibody, immune techniques used in agriculture.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2018
UNIT V
Origin of Life, Lamarckism and Darwinism
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2018
UNIT V
Mutational and Modern Concept of Evolution.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2018
UNIT V
Microbial Genetic Manipulation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Embryology: Pollen- pistil interaction
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Entry of pollen in to the stigma, style and embryo sac.
TOPIC TO BE COVERED IN THE MONTH OF September2019
Endosperm: Types. Embryogeny – Dicots (Crucifer) and monocot (grass).
TOPIC TO BE COVERED IN THE MONTH OF October 2019
A Brief account of polyembryony and apomixes and their significance.

CLASS -- B. Sc V SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Plant and environment: Atmosphere, water cycle, role and properties of light, temperature and soil.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Pollution: Water, air. and soil pollution. Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Sewage water and waste water. water types. Method of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. Y. B. Dalvi
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Embryology: Anther- Development, Microsporogenesis and male gametophyte.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
MGU. Palynology application of palynology in taxonomy, coal, oil exploration and forensic science.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Ovule – development, types structure.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Development of gametophyte.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Fungi: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
economic importance of fungi. General characters of lichens.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Plant pathology- common disease, symptoms, pathogen and control measure.

CLASS – V SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Green house introduction advantage limitation. Types of green house and structure.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Green house technology applied to ornamental, fruit plants and vegetable
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Harvest technology: Flower, Fruit plants management, packaging. Post-harvest technology and management.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Weed management

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. B.R. Sholapurmath
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH JUNE 2018 to JULY 2019
Plant anatomy: Tissues- types organisation and theories.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Permanent tissues- Simple and Complex
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Types of vascular bundles.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2019
Tissue system, Secretory- Nectary, lactiferous and oil glands.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Fungi: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
economic importance of fungi. General charecters of lichens.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Plant pathology- common disease, symptoms, pathogen and control measure.

CLASS – V SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Introduction to horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Horticulture practice- method of propagation.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Nursery management -methods of irrigation.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Seed propagule, collection storage and treatment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. B.R. Sholapurmath

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Gymnosperms: Habitat Habit, general characters, classification and reproduction.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Gymnosperms: Life cycle and anatomy
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Palaeobotany: Geological time scale and fossilization.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Rhynia, calamitis, lepidodendron, lepidocarpon, lepidostrobus, lygynopteris.

CLASS – VI SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2018 to JULY 2019
Introduction to horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2019
Horticulture practice- method of propagation.
TOPIC TO BE COVERED IN THE MONTH OF September 2019
Nursery management -methods of irrigation.
TOPIC TO BE COVERED IN THE MONTH OF October 2019
Seed propagule, collection storage and treatment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. P. M. Bhat
CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Algae: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2019
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2019
Pigmentation &economic importance of algae Origin evaluation of sex in algae.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2019
Virus and Bacteria- General characteristics, classification structure, nutrition

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant and environment: Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2019
Conservation of natural resources: Different types of natural resources and their conservation. Forest and forest management.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBR 2019
Wild life management in India.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2019
Energy resources. Biodiversity conservation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Mrs. Pradnya M. Ankalkhope.

CLASS – B. Sc I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant Anatomy: Root, stem and leaf
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2019
Secondary Growth – root and stem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2019
Abnormal Secondary Growth – Bignonia, Boerhrhavia. Dracaena Beetroot.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2019
Wood anatomy- general account, types.

CLASS – III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Bryophytes: Habitat, Habit classification. Reproduction and types.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2019
Evolution and origin. Schematic life cycle.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2019
Pteridophytes:Habitat, Habit classification.Reproduction &stelar evolution.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2019
Evaluation of sporophyte, general life cycle.

CLASS – V SEMESTER PAPER- II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Population ecology and ecosystem: growth curves and ecotypes.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2019
Structure of ecosystem.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Abiotic and biotic components. Food chain, food web energy flow
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Botanical regions of word, Vegetation types – Karnataka and India

Prof.P.M.Bhat

Monthly Teaching Plan

January 2018

B.Sc IInd semester-1) Pharmacognosy-introduction, definition, Impotence of pharmacognosy in modern medicine.
2) Classification of crude drugs-chemical and pharmacological classification.

B.Sc 4th semester 1) Classification of angiosperms-system proposed by Benthom and Hooker,Engler and Prantle with merits and demerits. Cytotaxonomy.

February 2018

B.Sc IInd semester 1) Evaluation of crude drugs-Organnleptic, Microscopic, chemical, physical and Biological.
2) Secondary metabolites-definition, Differences between primary and secondary metabolites, Interrelationship of basic metabolic pathway with secondary metabolite biosynthesis.
3) Major types terpenoid,alkaloid and their protective action against Pathogenic microbes and herbivores.

B.Sc 4th semester 1) Phytochemestry and Taxometrics.
2) Diversity of flowering plants-Family-Magnoliaceae, Anonaceae, Brassicaceae, Malvaceae, Rutaceae, Rhamnaceae, Anacardiaceae, Fabaceae, Myrtaceae, Combretaceae, Cucurbituceae and Apiaceae.

March 2018

B.Sc IInd semester 1) Major types-terpenoid,alkaloid and their protective action against pathogenic microbes and herbivores.
2) Pharmacologically active constituents- source plants parts and uses of
a) Steroids (diogenin and digitoxin) b)Tannins (catechin)resins(ginger)
c) Alkaloids (quinine, strychnine, reserpine, vinblastin).

B.Sc 4th semester-Diversity of flowering plants-Family-Rubiaceae, Asteraceae, Sapotaceae, Apocynaceae, Asclepiadaceae, Convolvulaceae, Solanaceae, Acanthaceae, Verbinaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae,Urticaceae.

April 2018

B.Sc IInd semester-Photomorphogenesis-photoperiodism,phytochrome, vernalization and Concept of biological clock.

B.Sc 4th semester-Diversity of Flowering Plants Orchidaceae, Amarlydaceae, liliaceae, Arecaceae and Poaceae. Solving question papers, Assignment correction.

DEPARTMENT OF BOTANY

Monthly Teaching Plan

Name: Mrs. Pradnya Mahaveer Ankalkhope
Designation: Lecturer

B.Sc. II sem

- **Topics to be covered in January 2018**
  1. Photosynthesis: Defination,Chloroplast, Photosynthetic pigments, Action spectrum, Concept of two photosystems, Red drop and Emerson enhancement effect, Cyclic and Non-cyclic Photophosphorylation.

- **Topics to be covered in February 2018**
  1. Photosynthesis: Calvin cycle, C_4 and CAM pathway, Photorespiration, Factors affecting photosynthesis.
  2. Respiration: Defination, Structure of mitochondria, Aerobic respiration-Glycolysis, Kreb's cycle

- **Topics to be covered in March 2018**
  1. Respiration: Electorns transpurt System, Redox potential, Oxidative Phoshorylation, Pentose Phosphate pathway, RQ, Factors affecting respiration.

- **Topics to be covered in April 2018**
  1. Growth Regulators: Defination, Auxins and its types, Structure and physiological role of Auxins, Structure and physiological role of Gibberellins, ABA, Ethylene, Growth inhibitors.
  2. Question papers discussion and solving.

B.Sc. VI sem- Paper I

- **Topics to he covered in January 2018**

  - **GENETICS-**

    1. Mendelism: History f Mendel's work, Genetic terminologies, Hybridisation steps used by Mendel
    2. Laws of inheritance: Monohybrid cross with law of dominance and segregation, Dihybrid cross with law of independent assortment, Trihybrid cross.
    3. Test and back cross.
    4. Gene interaction: Allelic interaction- Incomplete dominance and co-dominance. Non-allelic interaction-Complementary interaction.

- **Topics to be covered in February 2018**

    1. Gene interaction: Non-allelic interaction- Supplementary and epistasis interaction.
    2. Linkage: Defination, Linked genes, linkage groups, types of linkage with example and significance.
    3. Crossing over: Types of crossing over, Theories of crossing over, Significance of crossing over.

- **Topics to be covered in March 2018**

    1. Alleles and multiple alleles.
    2. Sex determination.
    3. Sex linked inheritance with examples.
    4. Mutations. Types of mutations.

- **Topics to be covered in April 2018**

    1. Genetic problems.
    2. Question papers discussion and solving.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Water Relations: solutions, suspensions & colloids, true solutions, percentage, molarity, molar, buffer, moial solutions, pH, colloids, emulsion, and gels. Permeability, diffusion, imbibition, osmosis, membranes, endosmosis, exosmosis,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
osmotic pressure, turgor pressure (TP), wall pressure (WP), relation between OP, DPD & TP, concept of water potential, plasmolysis, deplasmolysis, significance of osmosis & imbibition. Importance and sources of water
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Active and Passive water absorption. Mechanism of ascent of sap: root pressure theory and cohesion tension (Dixon &Jolly) theory.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Transpiration: types, mechanism, theories of opening & closing of stomata, factors affecting rate of transpirations, antitranspirants and guttation. And Mineral nutrition

CLASS – B. Sc VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Recombinant DNA technology and Bioinformatics: Enzyme, vector, marker gene, Steps of cloning technique, PCR and its application.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Genomic DNA and cDNA library. Brief concept on Genomics and proteomics.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Biotechnology and Genetic engineering of plants: Basic concepts, principles and scope. Aims, strategies for development of transgenic plants.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Agrobacterium-The natural genetic engineer. T-DNA and transposon mediated Gene tagging, Intellectual Property rights, possible ecological risks and ethical concerns.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. Y. B. Dalvi

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Thermodynamics: Principles, free energy, energy rich bonds phosporyl group transfer and ATP **Enzymes:** Classification, nomenclature (IUBMB)and properties; co-factors and coenzymes, isozymes, mechanism of enzyme action, enzyme inhibition, enzyme kinetics.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Carbohydrates: structure of mono, di and polysaccharides, stereoisomers, enantiomers and epimers. Lipids: structure of lipid (simple and compound) phospho and glycolipids, fatty acid, saturated and non-saturated.
Proteins: structure and classification of amino-acids, primary, secondary, tertiary and quaternary structure of proteins.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Growth regulators: Physiological roles of auxins, Gibberllins, cytokinins, ABA, Ethylene and growth inhibitors.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Pharmacologically active constituents: Source plants parts used & uses of 1.Steroids 2. Tunnins, resins 3. Alkaloids

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Microbial genetic manipulation and Immunology: Microbial genetic manipulation.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Bacterial transformation, selection of recombinant and transformants, genetic improvement of industrial microbes
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
nitrogen fixers & fermentation technology. Immunology: Immuno-systems, Immuno techniques in Agriculture.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
ELISA method to detect Plant diseases & Monoclonal antibodies.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. B.R. Sholapurmath
CLASS – IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Morphology of Angiosperms: Study of stems and its modifications, Leaf- types stipules, Phyllotaxy and their modifications. Study of Inflorescences, flowers and fruits. Angiosperm systematics: Botanical nomenclature.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Classification of Angiosperms: APG classification, Contributions of Cytology, Phytochemistry and Taximetrics to taxonomy.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Origin & Distribution, Family, Botanical name and utility of Food plants Fibres.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Oil yielding plants Paper & pulp Bamboo & Eucalyptus Spices, Beverages, Rubber.

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Nucleic Acid: DNA & RNA, occurrence,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
types and chemical compositions,
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Gene Expression: Experimental evidences for DNA as genetic material.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Structure of DNA.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Shri. P. M. Bhat
CLASS – B. Sc IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Classification of Angiosperms: Systems proposed by Bentham and Hooker.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Engler Prantl. Their salient features, merits and demerits
TOPIC TO BE COVERED IN THE MONTH OF March 2019
Diversity of flowering plants as illustrated by members of the following families: Annonaceae, Brassicaceae.
TOPIC TO BE COVERED IN THE MONTH OF April 2019
Malvaceae, Rutaceae, Rhamnaceae, Fabaceae, Myrtaceae.

CLASS -- VI SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2017 to JANUARY 2019
Cell Biology: The cell: General organization of prokaryotic and Eukaryotic cells.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Ultra-structure & functions of Nucleus, Plastids, Mitochondria, Golgi complex, Endoplasmic reticulum, Lysosomes, Peroxisomes & Vacuoles.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Evolution: Origin of life, Lamarckism, Darwinism,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Mutational and Modern concepts of evolution.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2018-2019)

NAME OF THE STAFF: Miss. Priyanka S. Kundekar
CLASS – B. Sc VI SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Morphology of Chromosomes: Number, size, shape, types, centromere, SAT chromosomes.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Ultra-structure of giant Chromosomes, Ploidy and chromosomal aberrations.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Cell division: Mitosis and Meiosis in plants.
TOPIC TO BE COVERED IN THE MONTH OF AFRIL 2019
Cell cycle: regulation of cell cycle.

CLASS – B. Sc VI SEMESTER PAPER -II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Gene concept- Genetic code, protein synthesis.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Gene regulation – procaryotes- operon concepts.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
Regulation of gene expression in procaryotes.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
Regulation of gene expression in Eucaryotes.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Embryology: Pollen- pistil interaction
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Entry of pollen in to the stigma, style and embryo sac.
TOPIC TO BE COVERED IN THE MONTH OF September2020
Endosperm: Types. Embryogeny – Dicots (Crucifer) and monocot (grass).
TOPIC TO BE COVERED IN THE MONTH OF October 2020
A Brief account of polyembryony and apomixes and their significance.

CLASS – B. Sc V SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Plant and environment: Atmosphere, water cycle, role and properties of light, temperature and soil.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Pollution: Water, air, and soil pollution. Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
Sewage water and waste water, water types. Method of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. Y. B. Dalvi

CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Embryology: Anther- Development, Microsporogenesis and male gametophyte.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
MGU. Palynology application of palynology in taxonomy, coal, oil exploration and forensic science.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Ovule – development, types structure.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
Development of gametophyte.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Bryophytes: Habitat, Habit classification. Reproduction and types. Evolution and origin. Schematic life cycle.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Pteridophytes :Habitat, Habit classification. Reproduction &stelar evolution, Evolution of sporophyte and life cycle.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Gymnosperms: Habitat Habit, general characters, classification and reproduction.
Gymnosperms: Life cycle and anatomy.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
Palaeobotany: Geological time scale and fossilization. Rhynia, calamitis, lepidodendron, lepidocarpon, lepidostrobus, lygynopteris.

CLASS – V SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Conservation of natural resources: Different types of natural resources and their conservation
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Forest and forest management.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Wild life management in India.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Energy resources. Biodiversity conservation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. B.R. Sholapurmath
CLASS – I SEMESTER

TOPIC TO BE COVERED IN THE MONTH JUNE 2019 to JULY 2020
Plant anatomy: Tissues- types organisation and theories.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Permanent tissues- Simple and Complex
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Types of vascular bundles.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Tissue system, Secretory- Nectary, lactiferous and oil glands.

CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Fungi: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
economic importance of fungi. General characters of lichens.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
Plant pathology- common disease, symptoms, pathogen and control measure.

CLASS – V SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Introduction to horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Horticulture practice- method of propagation.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Nursery management -methods of irrigation.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
Seed propagule, collection storage and treatment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. P. M. Bhat
CLASS – B. Sc III SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Algae: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Reproduction - vegetative, asexual and sexual.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Pigmentation &economic importance of algae. Origin evaluation of sex in algae.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Virus and Bacteria- General characteristics, classification structure, nutrition

CLASS – V SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2019 to JULY 2020
Introduction to Horticulture.
TOPIC TO BE COVERED IN THE MONTH OF August 2020
Nursery management and importance.
TOPIC TO BE COVERED IN THE MONTH OF September 2020
Harvest technology: Flower, Fruit plants management, packaging. Post-harvest technology and management.
TOPIC TO BE COVERED IN THE MONTH OF October 2020
weed management and control.

CLASS – V SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Population ecology and ecosystem: growth curves and ecotypes.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST2020
Structure of ecosystem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Abiotic and biotic components. Food chain, food web energy flow
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Botanical regions of word, Vegetation types – Karnataka and India

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Miss. Priyanka S. Kundekar

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant Anatomy: Root, stem and leaf.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Secondary Growth – root and stem.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Abnormal Secondary Growth – Bignonia, Boernrhavia.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Abnormal Secondary Growth-Dracaena Beetroot.

CLASS – V SEMESTER PAPER- I

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Plant breeding: History, Objectives
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Selection, Hybridization.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Mutational and polyploidy breeding.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Germ plasm – Maintainace Importance, Pollen bank, Quarantine method.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: R. S. Sawant

CLASS : B.Sc III Semester

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Pteridophytes: Habitat, Habit classification.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2019
Reproduction &stelar evolution.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2019
Evaluation of sporophyte
TOPIC TO BE COVERED IN THE MONTH OF OCTOMBER 2019
general life cycle.

CLASS : B.Sc III Semester

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
PLANT TISSUE CULTURE – Scope and significance, basic aspects, cellular totipotency.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Differentiation and morphogenesis.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Green house introduction advantage limitation. Types of green house and structure.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Types of green house and Green house technology applied to ornamental and fruit plants.

CLASS: B.Sc V Semester II

TOPIC TO BE COVERED IN THE MONTH OF JUNE 2016 to JULY 2017
Pollution: Water, air, and soil pollution.
TOPIC TO BE COVERED IN THE MONTH OF AUGUST 2020
Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF SEPTEMBER 2020
Sewage water and waste water. water types.
TOPIC TO BE COVERED IN THE MONTH OF OCTOBER 2020
Method of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. B. L. Majukar

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Water Relations: solutions, suspensions & colloids, true solutions, percentage, molarity, molar, buffer, molal solutions, pH, colloids, emulsion, and gels. Permeability, diffusion, imbibition, osmosis, membranes, endosmosis, exosmosis,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
osmotic pressure, turgor pressure (TP), wall pressure (WP), relation between OP, DPD & TP, concept of water potential, plasmolysis, deplasmolysis, significance of osmosis & imbibition. Importance and sources of water
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Active and Passive water absorption. Mechanism of ascent of sap: root pressure theory and cohesion tension (Dixon & Jolly) theory.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Transpiration: types, mechanism, theories of opening & closing of stomata, factors affecting rate of transpirations, antitranspirants and guttation. And Mineral nutrition

CLASS – B. Sc VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Recombinant DNA technology and Bioinformatics: Enzyme, vector, marker gene, Steps of cloning technique, PCR and its application.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Genomic DNA and cDNA library. Brief concept on Genomics and proteomics.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Biotechnology and Genetic engineering of plants: Basic concepts, principles and scope. Aims, strategies for development of transgenic plants.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Agrobacterium-The natural genetic engineer. T-DNA and transposon mediated Gene tagging, Intellectual Property rights, possible ecological risks and ethical concerns.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Shri. Y. B. Dalvi

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Thermodynamics: Principles, free energy, energy rich bonds phosporyl group transfer and ATP. **Enzymes:** Classification, nomenclature (IUBMB)and properties; co-factors and coenzymes, isozymes, mechanism of enzyme action, enzyme inhibition, enzyme kinetics.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Carbohydrates: structure of mono, di and polysaccharides, stereoisomers, enantiomers and epimers.Lipids: structure of lipid (simple and compound) phospho and glycolipids, fatty acid, saturated and non-saturated.
Proteins: structure and classification of amino-acids, primary, secondary, tertiary and quaternary structure of proteins.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Growth regulators: Physiological roles of auxins,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Gibberllins, cytokinins, ABA, Ethylene and growth inhibitors.

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Evolution: Origin of life
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Lamarckism, Darwinism,
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Mutational concept of evolution
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Modern concepts of evolution.

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2018 to JANUARY 2019
Microbial genetic manipulation and Immunology: Microbial genetic manipulation.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2019
Bacterial transformation, selection of recombinant and transformants, genetic improvement of industrial microbes
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2019
nitrogen fixers & fermentation technology. Immunology: immuno-systems, Immuno techniques in Agriculture.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2019
ELISA method to detect Plant diseases & Monoclonal antibodies.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2016-2017)

NAME OF THE STAFF: Mrs. B.R. Sholapurmath

CLASS – IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Morphology of Angiosperms: Study of stems and its modifications, Leaf- types stipules. Phyllotaxy and their modifications. Study of Inflorescences, flowers and fruits. Angiosperm systematics: Botanical nomenclature.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Classification of Angiosperms: APG classification, Contributions of Cytology, Phytochemistry and Taximetrics to taxonomy.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Origin & Distribution, Family, Botanical name and utility of Food plants Fibres.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Oil yielding plants Paper & pulp Bamboo & Eucalyptus Spices, Beverages, Rubber.

CLASS II SEM :

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2017 to JANUARY 2020
Secondary metabolites: Definition of secondary metabolites & difference with primary metabolites.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Interrelationship of basic metabolic pathway with secondary metabolite.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Pharmacologically active constituents: Source plants parts used & uses of 1.Steroids 2. Tannins
TOPIC TO BE COVERED IN THE MONTH OF April 2020
Pharmacologically active constituents: Source plants parts used & uses of resins Alkaloids

CLASS – VI SEMESTER PAPER II

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2016 to JANUARY 2017
Nucleic Acid. DNA & RNA, occurrence, types and chemical compositions,
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2017
Gene Expression: Experimental evidences for DNA as genetic material. Structure of DNA.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2017
Replication, Semiconservative method, RNA and types, post transcription changes.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2017
Gene concept, Genetic code & protein synthesis.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Miss Priyanka S. Kundekar

CLASS – II SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Photosynthesis: Photosynthetic pigments, action spectrum, concept of two photosystems: Red drop & Emerson enhancement effect
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Photophosphorylation, Calvin cycle, C4 & CAM path way, photorespiration and factors affecting photosynthesis.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Respiration: aerobic, anaerobic & fermentation, glycolysis, Kreb's cycle, electron transport system, redox potential, oxidative phosphorylation, pentose phosphate pathway.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Respiratory quotient (RQ) and factor affecting respiration Nitrogen fixation, importance of nitrate reductase, its regulation and ammonium assimilation.

CLASS – VI SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Morphology of Chromosomes: Number, size, shape, types, centromere, SAT chromosomes
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Ultra-structure of giant Chromosomes, Ploidy and chromosomal aberrations.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Cell division: Mitosis and Meiosis in plants.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Cell cycle: regulation of cell cycle.

CLASS – VI SEMESTER PAPER -I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Regulation of gene expression in prokaryotes.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Regulation of gene expression in prokaryotes
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Regulation of gene expression in eukaryotes.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
GENOMICS AND PROTEOMICS

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2019-2020)

NAME OF THE STAFF: Mr. R.S. Sawant

CLASS – IV SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Diversity of flowering plants as illustrated by members of the followingfamilies: Annonaceae, Brassicaceae, Malvaceae
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Rutaceae, Rhamnaceae, Fabaceae, Myrtaceae, Combretaceae, Cucurbitaceae,
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Apiceae, Rubiaceae, Asteraceae, Apocyanaceae, Asclepiadaceae, Convolvulaceae.
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Solanaceae, Acanthaceae, Verbenaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae, Arecaceae and Poaceae.

CLASS – VI SEMESTER PAPER I

TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2019 to JANUARY 2020
Genetics: Mendelism Laws of inheritance, Monohybrid, Dihybrid Experiments.
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2020
Gene interaction (Allelic – incomplete dominance, co-dominance Non – allelic – Complementary.
TOPIC TO BE COVERED IN THE MONTH OF MARCH 2020
Supplementary, Epistasis Linkage & crossing over, Alleles, Multiple alleles, Sex determination,
TOPIC TO BE COVERED IN THE MONTH OF APRIL 2020
Sex linked inheritance, Mutations, Problems related to the above topics

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: B.R.Solhapurmath

CLASS -B.SC 1st SEMESTER

Paper : I

TOPIC TO BE COVERED IN THE MONTH OF october 2020
• **Algae**: General characteristics; Ecology and distribution; Range of thallus organization and reproduction; • **Fungi**: Introduction- General characteristics, ecology and significance, range of thallus organization, cell wall composition , nutrition, reproduction and classification; • **Fungal Diseases:** Late blight of potato, White rust of *Albugo candida*., Black rust of *Puccinia*, Powdery mildew and Early Blight of Tomato. • **Symbiotic Associations-Lichens**: General account, reproduction and significance; Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.
TOPIC TO BE COVERED IN THE MONTH OF November 2020
Algae: Classification of algae by smith; Morphology and life-cycles of the following: *Nostoc*, *Oedogonium*, *Vaucheria*, *Volvox*, *Ectocarpus* & *Batrachospermum*. Economic importance of algae. **True Fungi**- General characteristics, ecology and significance, life cycle of *Rhizopus* (Zygomycota), *Penicillium* (Ascomycota), *cercospora* (Deutoromycota), *Puccinia*, *Agaricus* (Basidiomycota).
TOPIC TO BE COVERED IN THE MONTH OF December 2020
• **Fungal Diseases:** Late blight of potato, White rust of *Albugo candida*., Black rust of *Puccinia*, Powdery mildew and Early Blight of Tomato. • **Symbiotic Associations-Lichens**: General account, reproduction and significance;
TOPIC TO BE COVERED IN THE MONTH OF January 2021
• Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.
TOPIC TO BE COVERED IN THE MONTH OF february2021
• **Pteridophytes:** General characteristics, classification, Early land plants

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: B.R.Solhapurmath

CLASS -B.SC 1st SEMESTER

Paper : I

TOPIC TO BE COVERED IN THE MONTH OF october 2020
• **Algae**: General characteristics; Ecology and distribution, Range of thallus organization and reproduction; • **Fungi**: Introduction- General characteristics, ecology and significance, range of thallus organization, cell wall composition , nutrition, reproduction and classification; • **Fungal Diseases:** Late blight of potato, White rust of *Albugo candida*., Black rust of *Puccinia*, Powdery mildew and Early Blight of Tomato. • **Symbiotic Associations-Lichens**: General account, reproduction and significance; Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.
TOPIC TO BE COVERED IN THE MONTH OF November 2020
Algae: Classification of algae by smith; Morphology and life-cycles of the following: *Nostoc*, *Oedogonium*, *Vaucheria*, *Volvox*, *Ectocarpus* & *Batrachospermum*. Economic importance of algae. **True Fungi**- General characteristics, ecology and significance, life cycle of *Rhizopus* (Zygomycota), *Penicillium* (Ascomycota), *cercospora (Deutoromycota), Puccinia, Agaricus* (Basidiomycota);
TOPIC TO BE COVERED IN THE MONTH OF December 2020
• **Fungal Diseases:** Late blight of potato, White rust of *Albugo candida*., Black rust of *Puccinia*, Powdery mildew and Early Blight of Tomato. • **Symbiotic Associations-Lichens**: General account, reproduction and significance;
TOPIC TO BE COVERED IN THE MONTH OF January 2021
• Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.
TOPIC TO BE COVERED IN THE MONTH OF february2021
• **Pteridophytes:** General characteristics, classification, Early land plants

(lepidodendron, Lepidocarpon, Calamites). disease. • Classification (up family), morphology, anatomy and reproduction of *Selaginella, Equisetum* and *Pteris*. (Developmental details not to be included).
TOPIC TO BE COVERED IN THE MONTH OF March 2021
• Heterospory and seed habit, stelar evolution. Ecological and economical importance of Pteridophytes.

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MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Y.B.Dalvi

CLASS -B.SC 1ST SEMESTER

Paper : I

TOPIC TO BE COVERED IN THE MONTH OF october 2020
Bryophytes: General characteristics, adaptations to land habit.
TOPIC TO BE COVERED IN THE MONTH OF November 2020
Bacteria: Discovery, General characteristics and cell structure;
TOPIC TO BE COVERED IN THE MONTH OF December 2020
Bacteria: Reproduction – vegetative, asexual and recombination (conjugation, Transformation and transduction); Economic importance.
TOPIC TO BE COVERED IN THE MONTH OF January 2021
• **Viral Plant Diseases:** TMV, Vein clearing, Dwarfing, Yellowing and BBTV disease.
TOPIC TO BE COVERED IN THE MONTH OF february2021
• **Bacterial Plant Disease:** Citrus canker, Bacterial blight and Crown gall disease.

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MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Rahul S. Sawant

CLASS -B.SC 1ST SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF october 2020
General characteristics, classification
TOPIC TO BE COVERED IN THE MONTH OF November 2020
Classification (up to family), morphology, of *Cycas*
TOPIC TO BE COVERED IN THE MONTH OF December 2020
anatomy and reproduction of *Cycas*
TOPIC TO BE COVERED IN THE MONTH OF January 2021
Classification (up to family), morphology, anatomy and reproduction of *Gnetum*
TOPIC TO BE COVERED IN THE MONTH OF February 2021
Classification (up to family), morphology, anatomy and reproduction of *Pinus*.
TOPIC TO BE COVERED IN THE MONTH OF March 2021
Ecological and economical importance

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Priyanka kundekar

CLASS -B.SC 1st SEMESTER

TOPIC TO BE COVERED IN THE MONTH OF october 2020
General characteristics, adaptations to land habit. Classification,
TOPIC TO BE COVERED IN THE MONTH OF November 2020
Range of thallus organization. Classification (up to family)
TOPIC TO BE COVERED IN THE MONTH OF December 2020
Morphology, anatomy and reproduction of *Riccia, Marchantia,* (Developmental details not to be included)
TOPIC TO BE COVERED IN THE MONTH OF January 2021
• morphology, anatomy and reproduction *Anthoceros* and *Funaria*
TOPIC TO BE COVERED IN THE MONTH OF february2021
• Ecology and economic importance of bryophytes with special mention of *Sphagnum.*

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MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Prof. B. L. Majukar

CLASS: B.Sc. V Semester P-II

TOPIC TO BE COVERED IN THE OCTOBER 2020
Pollution: Water, air, and soil pollution.
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Acid rain global warming and ozone depletion.
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER2020
Sewage water and waste water. water types.
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2021
Method of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

CLASS: B.Sc. V Semester P-II

TOPIC TO BE COVERED IN THE OCTOBER 2020
Structure of ecosystem.
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Abiotic and biotic compponents. Food chain, food web energy flow
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER2020
Morphological, anatomical and physiological responses of plants to water and salinity.
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2021
Morphological, anatomical and physiological responses of plants to Temperature and Light

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Prof. Y. B. Dalvi

CLASS: B. Sc V Semester P-I

TOPIC TO BE COVERED IN THE OCTOBER 2020
Introduction to Horticulture.
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Nursery management and importance.
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER2020
Harvest technology: Flower, Fruit plants management, packaging. Post-harvest technology and management.
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2020
weed management and control.

CLASS: B. Sc V Semester P-II

TOPIC TO BE COVERED IN THE OCTOBER 2020
Botanical regions of word, Vegetation types – Karnataka and India
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Conservation of natural resources: Different types of natural resources and their conservation
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER2020
Wild life management in India. Wild life management in India.
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2021
Energy resources. Biodiversity conservation.

DEPARMENT OF BOTANY

MONTHLY TEACHING PLANNING (2020-2021)

NAME OF THE STAFF: Prof. R. S. Sawant

CLASS: B. Sc. III Semester

TOPIC TO BE COVERED IN THE OCTOBER 2020
General characters of Gymnosperm and classification
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Distribution, structure and Reproduction of Cycas
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER 2020
Distribution, structure and Reproduction of Pinus
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2021
Distribution, structure and Reproduction of Gnetum and
TOPIC TO BE COVERED IN THE MONTH OF FEBRUARY 2021
Economic importance

CLASS: B. Sc V Semester I

TOPIC TO BE COVERED IN THE OCTOBER 2020
Basic aspects and cellular totipotency
TOPIC TO BE COVERED IN THE MONTH OF NOVEMBER 2020
Embryo culture, Haploid Culture and Shoot tip culture
TOPIC TO BE COVERED IN THE MONTH OF DECEMBER2020
Differentiation and morphogenesis and scope of Tissue culture
TOPIC TO BE COVERED IN THE MONTH OF JANUARY 2021
Greenhouse technology: Introduction type and structure of greenhouse used for ornamental plants, Horticultural plants and Vegetables

IQAC Coordinator
GSS College, Belagavi

G. S. Sc. College, Belagavi

SKE Society's

G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month Jan 2016

Class	Topics to be covered	Staff
B.Sc. II sem	Introduction to data structure	Prof.Mrs.S.S.Desai
	Dynamic memory allocation files	Prof. V.R.Kalasapur
B.Sc. IVsem	Process synchronization and deadlock	Prof.Mrs.S.S.Desai
B.Sc. VI sem	Introduction to java,declaration of variables,data type.operators,loooping	Prof.Mr.P.M.Deshpande
	DBMS concepts and architecture	Prof. V.R.Kalasapur

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month Feb 2016

Class	Topics to be covered	Staff
B.Sc. IIsem	Recursion	Prof.Mrs.S.S.Desai
	Searching technics	Prof. V.R.Kalasapur
B.Sc. IV sem	Memory management	Prof.Mrs.S.S.Desai
B.Sc. VI sem	Classes ,array,string vector	Prof.Mr.P.M.Deshpande
	Dta modeling E-R diagram	Prof. V.R.Kalasapur

SKE Society's

G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month March 2016

Class	Topics to be covered	Staff
B.Sc. I sem	Sorting technics,	Prof.Mrs.S.S.Desai
	Stacks	Prof. V.R.Kalasapur
B.Sc. III sem	Process synchronization and deadlock	Prof.Mrs.S.S.Desai
B.Sc. V sem	Interface,packages,multithreading	Prof.Mr.P.M.Deshpande
	Relational data model and relational algebra	Prof. V.R.Kalasapur

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month April 2016

Class	Topics to be covered	Staff
B.Sc. I sem	Queue,linked list	Prof.Mrs.S.S.Desai
	Tree	Prof. V.R.Kalasapur
B.Sc. III sem	File management,disk management	Prof.Mrs.S.S.Desai
B.Sc. V sem	Exception handling ,applet,graphics	Prof.Mr.P.M.Deshpande
	Normalisation,relational database language	Prof. V.R.Kalasapur

Teaching plan for year 2016

Teaching plan for year 2016

SKE Society's

G S Sci. College, Belgaum
Department of Computer Science

Teaching plan for the month June-2016

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Fundamentals of c,input/output devices,generation,history	Prof.Mrs.S.S.Desai Prof.Mr.V.R.Kalsapaur
B.Sc. III sem	OOPS with C++	Basic concepts of OOPs in detail	Prof.Mr.P.M.Deshpande
B.Sc. V sem	Operating System	OS types ,structure,process management	Prof.Mrs.S.S.Desai
	DBMS	Introduction to DBMS,Database system concept and architecture	Prof. V.R.Kalasapur

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month July-2016

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Number system C programming Language basic	Prof.S.S.Desai Prof. V.R.Kalasapur
B.Sc. III sem	OOPS with C++	OOP's features and functions Class concepts	Prof. P.M.Deshpande
B.Sc. V sem	Operating System	synchronization & deadlock	Prof.Mrs.S.S.Desai
	DBMS	Data Modeling Using ER Model	Prof. V.R.Kalasapur

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month August-2016

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Operator and expressions Conditional & Looping statements	Prof. V.R.Kalasapur Prof.S.S.Desai
B.Sc. III sem	OOPS with C++	Constructor Inhertance & operator overloading	Prof.Mr.S.S.Desai
B.Sc. V sem	Operating System	Memory management File Management	Prof.Mrs.S.S.Desai
	DBMS	Relational Algebra	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month September-2016

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Arrays,structures & user-defined functions unions	Prof. V.R.Kalasapur Prof.S.S.Desai
B.Sc. III sem	OOPS with C++	Virtual function,template,exception handling	Prof.Mr.P.M.Deshpande
B.Sc. V sem	Operating System	File managementDisk Management	Prof.Mrs.S.S.Desai
	DBMS	Functional Dependencies Relational Database Languages	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month Dec 2016

Class	Topics to be covered	Staff
B.Sc. II sem	Introduction to data structure	Prof.Mrs.S.S.Desai
	Dynamic memory allocation Files	Prof. V.R.Kalasapur
B.Sc. IVsem	Process synchronization and deadlock	Prof.Mrs.S.S.Desai
B.Sc. VI sem	Introduction to java,declaration of variables,data type.operators,loooping	Prof.Mr.P.M.Deshpande
	DBMS concepts and architecture	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month Jan 2017

Class	Topics to be covered	Staff
B.Sc. IIsem	Recursion	Prof.Mrs.S.S.Desai
	Searching technics	Prof. V.R.Kalasapur
B.Sc. IV sem	Memory management	Prof.Mrs.S.S.Desai
B.Sc. VI sem	Classes ,array,string vector	Prof.Mr.P.M.Deshpande
	Dta modeling E-R diagram	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month Feb 2017

Class	Topics to be covered	Staff
B.Sc. I sem	Sorting technics,	Prof.Mrs.S.S.Desai
	Stacks	Prof. V.R.Kalasapur
B.Sc. III sem	Process synchronization and deadlock	Prof.Mrs.S.S.Desai
B.Sc. V sem	Interface,packages,multithreading	Prof.Mr.P.M.Deshpande
	Relational data model and relational algebra	Prof. V.R.Kalasapur

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month March 2017

Class	Topics to be covered	Staff
B.Sc. I sem	Queue,linked list	Prof.Mrs.S.S.Desai
	Tree	Prof. V.R.Kalasapur
B.Sc. III sem	File management,disk management	Prof.Mrs.S.S.Desai
B.Sc. V sem	Exception handling ,applet,graphics	Prof.Mr.P.M.Deshpande
	Normalisation,relational database language	Prof. V.R.Kalasapur

Teaching plan for year 2020

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month June-2017

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Unit 1:Computing Fundamentals	Prof. V.R.Kalasapur
B.Sc. III sem	OOPS with C++	Revision of C	Prof.Mrs.S.S.Desai
B.Sc. V sem	Operating System	Revision Unix	Prof.Mrs.S.S.Desai
	DBMS	Unit 1:Introduction to DBMS	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month July-2017

Class	Subject Name	Topics to be covered	Staff
B.sci 1 sem	C.F & C-PROG	Unit 2:C programming Language	Prof. V.R.Kalasapur
B.Sc. III sem	OOPS with C++	Unit 1: OOP's concept and functions Unit 2: Class concepts	Prof.Mrs.S.S.Desai
B.Sc. V sem	Operating System	Unit 1: Operating system & process management Unit 2: synchronization & dedlock	Prof.Mrs.S.S.Desai
	DBMS	Unit 2:Data Modeling Using ER Model	Prof. V.R.Kalasapur

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Teaching plan for the month August-2017

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Unit 3: Conditional & Looping statements	Prof. V.R.Kalasapur
B.Sc. III sem	OOPS with C++	Unit 2:Constructor Unit 3: Inheritance & operator overloading	Prof.Mrs.S.S.Desai
B.Sc. V sem	Operating System	Unit 2: Deadlock Unit 3:Memory management Unit 4: File Management	Prof.Mrs.S.S.Desai
	DBMS	Unit 3:Relational Algebra	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month September-2017

Class	Subject Name	Topics to be covered	Staff
B.sci I sem	C.F & C-PROG	Unit 4:Arrays,structures & user-defined functions	Prof. V.R.Kalasapur
B.Sc. III sem	OOPS with C++	Unit 5:Templates & Stream	Prof.Mrs.S.S.Desai
B.Sc. V sem	Operating System	Unit 5:Disk Management	Prof.Mrs.S.S.Desai
	DBMS	Unit 4:Functional Dependencies Unit 5:Relational Database Languages	Prof. V.R.Kalasapur

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Teaching plan for the month Dec-2017

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Class	Subject Name	Topics to be covered	Staff
B.sc I sem	Data Structure	Introduction to data structure	Prof.V.R.Kalsapur
B.Sc. III sem	Introduction to unix	Introduction to unix operating system	Prof.S.S.Desai
B.Sc. V sem	Java programing language	Introduction to java	Prof.S.S.Desai
	Computer networks	Introduction to computer networks with its application	Prof.V.R.Kalsapur

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Teaching plan for the month Jan-2018

Class	Subject Name	Topics to be covered	Staff
B.sc I sem			
B.Sc. III sem			
B.Sc. V sem			

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Teaching plan for the month Feb-2018

Class	Subject Name	Topics to be covered	Staff
B.sc I sem			
B.Sc. III sem			
B.Sc. V sem			

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Department of Computer Science

Teaching plan for the month July-2018

Class	Subject Name	Topics to be covered	Staff
B.sc I sem	C.F & C-PROG	Introduction to basic concept.Introduction to c program	Prof.Mrs.S.S.Desai
B.Sc. III sem	Digital logic	Introduction to digital computers	Prof. V.R.Kalasapur
B.Sc. V sem	Operating System	Introduction to operating system ,types and function of o.s.	Prof.Mrs.S.S.Desai
	DBMS	Introduction to DBMS	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month August-2018

Class	Subject Name	Topics to be covered	Staff
B.sc I sem	C.F & C-PROG	Array , strings and function	Prof.Mrs.S.S.Desai
B.Sc. III sem	Digital logic	Boolean algebra combinational circuit	Prof. V.R.Kalasapur
B.Sc. V sem	Operating System	Process synchronization and memory management	Prof.Mrs.S.S.Desai
	DBMS	Relational data model and database language	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month September-2018

Class	Subject Name	Topics to be covered	Staff
B.sc I sem	C,F & C-PROG	Structures,pointers file handling	Prof.Mrs.S.S.Desai
B.Sc. III sem	Digital logic	Synchronous sequential logic,memory and programing logic	Prof. V.R.Kalasapur
B.Sc. V sem	Operating System	File management and Disk Management	Prof.Mrs.S.S.Desai
	DBMS	Functional Dependencies Relational Database Languages	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month Oct-2018

Class	Subjeet Name	Topics to be covered	Staff
B.sc I sem	C.F & C-PROG	file handling programs	Prof.Mrs.S.S.Desai
B.Sc. III sem	Digital logic	memory and programing logic	Prof. V.R.Kalasapur
B.Sc. V sem	Operating System	Disk Management	Prof.Mrs.S.S.Desai
	DBMS	Relational Database Languages	Prof. V.R.Kalasapur

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Department of Computer Science

Teaching plan for the month Jan-2019

Class	Subject Name	Topics to be covered	Staff
B.sc IIsem	Data structure using c	Unit1:Advanced c DNA and pointer Unit 2:Introduction to data structure	Prof.V.R.Kalsapur
B.Sc.IVsem	Operating system	Unit 1:Introduction of operating system Unit 2:Process sceduling	Prof.Mrs.S.S.Desai
B.Sc.VIsem	Computer network	Unit 1:Introduction to computer network Unit 2:Data linked layer	Prof.V.R.Kalsapur
	Java	Unit 1:Introduction to java Unit 2:Concept of class and inheritance	Prof.Mrs.S.S.Desai

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month Feb-2019

Class	Subject Name	Topics to be covered	Staff
B.sc IIsem	Data structure using c	Sorting and searching technics,recursion	Prof.V.R.Kalsapur
B.Sc.IVsem	Operating system	Process scheduling Interprocess communication	Prof.Mrs.S.S.Desai
B.Sc.VIsem	Computer network	Data link layer Medium access control	Prof.V.R.Kalsapur
	Java	Arrays,interface,multithreading	Prof.Mrs.S.S.Desai

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G S Sci. College, Belgaum

Department of Computer Science

Teaching plan for the month March-2019

Class	Subject Name	Topics to be covered	Staff
B.sc IIsem	Data structure using c	Queue Linked list	Prof.V.R.Kalsapur
B.Sc.IVsem	Operating system	File management Disk Management	Prof.Mrs.S.S.Desai
B.Sc.VIsem	Computer network	Congesion control algorithm Transport layer And application layer	Prof.V.R.Kalsapur
	Java	Exception handling Graphics	Prof.Mrs.S.S.Desai

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DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF JUNE 2019

	B.Sc.I semester
V.R.K.	**Computer fundamentas and c program** Fundamentals of computer Introduction to c
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Binary gates, operation, number conversion
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Introduction to purpose of RDBMS Creating and constructiong database
S.S.D	**Paper2 : Core Java** Basic concepts of java

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DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF JULY 2019

	B.Sc.I semester
V.R.K.	**Computer fundamentas and c program** Decision making and branching
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Boolean expression ,k map,don't care condition Nand and nor implementation
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Relational model Database design and E-R model
S.S.D	**Paper2 : Core Java** Concept of class.inheritance and interface

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DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF Aug 2019

	B.Sc.I semester
V.R.K.	**Computer fundamentas and c program** Theary of function in c Arrays and strings
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Combinational circuit, synchronous circuit and sequential logic circuit
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Database model E R diagram Data storage and physical storage media
S.S.D	**Paper2 : Core Java** Interface and packages Exception handling Thread

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF SEP 2019

	B.Sc.I semester
V.R.K.	**Computer fundamentas and c program** Error handling String handling function
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Flip flop,counters Resiters
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Transaction and concurrency control
S.S.D	**Paper2 : Core Java** Multithreading ,streams and awt concepts

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF JAN 2020

	B.Sc.I semester
V.R.K.	**Data structure using c** Introduction to data structure Introduction to stack Introduction to queue
	B.Sc.IIIsemester
S.S.D.	**Operating system** Types of operating system and Types of operating structure Process scheduling
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Data communication** Introduction to data communication Data and signals
S.S.D	**Paper 2 : Web programming** Applet programming Java awt and swing classes

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF FEB 2020

	B.Sc.I semester
V.R.K.	**Data structure using c** Searching , Sorting Linked list technichs
	B.Sc.IIIsemester
S.S.D.	**Operating system** Process scheduling Process synchronization
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Data communication** Digital Transmission and physical layer and media
S.S.D	**Paper 2 : Web programming** HTML and XHTML language

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF MARCH 2020

	B.Sc.I semester
V.R.K.	**Data structure using c** Dynamic memory allocation Pointers
	B.Sc.IIIsemester
S.S.D.	**Operating system** Memory management Virtual memory
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Data communication** Switching circuit switched networks
S.S.D	**Paper 2 : Web programming** Java script and HTML document

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF APRIL 2020

	B.Sc.I semester
V.R.K.	**Data structure using c** Recursion Recursive function in c, bionomial coefficient
	B.Sc.IIIsemester
S.S.D.	**Operating system** Input Output device management Hardware management
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Data communication** Data control and framing
S.S.D	**Paper 2 : Web programming** Perl and CGI

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF NOV 2020

	B.Sc.I semester
V.R.K.	
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Binary gates, operation, number conversion
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Introduction to purpose of RDBMS Creating and constructiong database
S.S.D	**Paper2 : Core Java** Basic concepts of java

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF DEC 2020

	B.Sc.I semester
V.R.K.	
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Boolean expression ,k map,don't care condition Nand and nor implementation
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Relational model Database design and E-R model
S.S.D	**Paper2 : Core Java** Concept of class.inheritance and interface

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF JAN 2021

	B.Sc.I semester
V.R.K.	
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Combinational circuit, synchronous circuit and sequential logic circuit
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Database model E R diagram Data storage and physical storage media
S.S.D	**Paper2 : Core Java** Interface and packages Exception handling Thread

HOD

DEPARTMENT OF COMPUTER SCIENCE

G.S.S. COLLEGE ,BELGAUM

TEACHING PLAN FOR THE MONTH OF FEB 2021

	B.Sc.I semester
V.R.K	
	B.Sc.IIIsemester
S.S.D.	**Digital Logic** Flip flop,counters Resiters
	B.Sc.Vsemester
V.R.K.	**Paper 1 : Relational database management system** Transaction and concurrency control
S.S.D	**Paper2 : Core Java** Multithreading ,streams and awt concepts

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

March 2021

B.Sc. Semester I

Basic English:

Prose: Revision

Poetry: Revision

Grammar: 1) Synonyms and Antonyms

B.Sc. Semester III

Basic English:

Text: Revision

Grammar: Revision

Add. English:

Text: Revision

Grammar: 1) Use of verbs and phrasal verbs

HOD

IQAC Co-ordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

1st October 2020 to 10th March 2021

October 2020

B.Sc. Semester I

Basic English: None

B.Sc. Semester III

Basic English:

Introduction to the text Eco English

Unit 4: Pollution

Grammar: General English Exercises.

Add. English:

Text: Introduction to the text- "Final Solution"

Grammar: General English Exercises.

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

November 2020

B.Sc. Semester I

Basic English:

Prose: Introduction to the textbook "English Gems".

1) The Last Leaf

Poetry: None

Grammar: General English Exercises.

B.Sc. Semester III

Basic English:

Unit 7: Water

Grammar: None

Add. English:

Text: The Play "Final Solution" Act I

Grammar: None

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

December 2020

B.Sc. Semester I

Basic English:

Prose: 1) The Kid

Poetry: 1) The Road not Taken

Grammar: None

B.Sc. Semester III

Basic English:

Unit 6: River

Grammar: None

Add. English:

Text: The Play "Final Solution" Act II

Grammar: None

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

January 2021

B.Sc. Semester I

Basic English:

Prose: 1) The Challenge of Everest

Poetry: 1) Prayer for My Daughter

Grammar: 1) Articles

2) Prepositions

B.Sc. Semester III

Basic English:

Unit 1: Will the World Come To an End

Unit 2: Noah Today

Unit 3: The Happy Man Shirt

Grammar: 1 Confusing Words

2) One Word Substitutes

Add. English:

Text: The Play "Final Solution" Act III

Grammar: None

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

February 2021

B.Sc. Semester I

Basic English:

Prose: 1) Zero Budget Natural Farming

Poetry: 1) Still I Rise

2) How Did You Die

Grammar: 1) Word Class

2) Introduction to self and others

B.Sc. Semester III

Basic English:

Unit 5: Animal Farm

Unit 2: Global Warming

Grammar: 1) Interpretation of notices

2) Paraphrasing prose and poetry

Add. English:

Text: The Play "Final Solution" critical analysis

Grammar: 1) Use of adverbs and adjectives

2) Futurity in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2020-2021

Monthly Teaching Plan

March 2021

B.Sc. Semester I

Basic English:

Prose: Revision

Poetry: Revision

Grammar: 1) Synonyms and Antonyms

B.Sc. Semester III

Basic English:

Text: Revision

Grammar: Revision

Add. English:

Text: Revision

Grammar: 1) Use of verbs and phrasal verbs

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan: June

B.Sc Semester I & III

B.Sc. I Sem

Basic English:

Prose & Poetry: Introduction to the text

Grammar: General English Lesson Exercises.

Add. English:

Text: Introduction to the text- "Seven One Act Plays"

Grammar: General English Lesson Exercises.

B.Sc Semester III

Basic English:

Prose: Introduction. Text: Eco-English

Grammar: General English Grammar

1) Punctuation
2) Vocabulary Building

Add. English: Introduction to the play Final Solutions, by Mahesh Datteni

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly teaching plan: JULY 2019

B.Sc Semester I & III

B.Sc. I Sem: BASIC ENGLISH

PROSE: 1) Science and Religion by Dr S Radhakrishnan.

2) Time to ignite the minds of the People – by Dr A.P.J Abdul Kalam

POETRY: 1) Delhi

2) The Purdha Nashin

GRAMMAR: 1) Use of articles

2) Propositions (types)

B.Sc. III Sem: Text Eco-English.

Units: 1,2,5,6

1) Will the world come to an end?

2) Noah Today

3) Animal Farm

4) Rivers

B.Sc. I Sem : ADDL. ENGLISH:

1. The Seven Slaves

2. One Good Turn

III Sem ADDL. ENGLISH: The first Act of the play: Final Solutions

Grammar: Futurity in English.

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan: Aug 2019

B.Sc Semester I & III

B.Sc. I Sem Basic:

Prose: 1) The Portrait of a Lady- Kushwant Singh

Poetry: 1) Mirror

Grammar: Transformation of Sentences.

B.Sc Sem III Basic: Eco-English Units 3,7

Unit 3) The Happy Men Shirt

Unit 7) Water

Grammar: 1) Confusing Words

1) One word substitutes

B.Sc. Sem I Add. English.

Text: 1) The play "Night Watches"

Grammar: 1) Descriptions People, Things & Events

2) Vocabulary – Textual

B.Sc. Sem III Add. English.:-

IInd Act of the play Final Solutions.

Grammar: 1) Use of adjectives and Adverbs

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan: Sept 2019

B.Sc Semester I & III

B.Sc Sem I Basic:

Prose: The Coffee House of Surat – Tolstoy

Poetry: 1) No Second Troy

2) Blossoms

Grammar: 1) Report Writing

2) Dialogue Writing

B.Sc. Sem I Add. English:

Text: Sunday Costs Five Pesos

B.Sc Sem III Basic:

Unit 4 – Pollution

Unit -8 – Global warming

Grammar : 1) Interpretation of notices.

2) Paraphrasing

B.Sc. III Add English:

1) The Play : The Final Solutions Act III

Grammar: 1) Use of Verbs and Phrasal Verbs and Determiners

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan: October 2019

B.Sc Semester I & III

B.Sc Sem I Basic English:

Prose: 1) Good Manners

Grammar: 1) Introducing Self and others

2) Revision

B.Sc Sem I Add. English:

Text: Unexpected

Grammar: Revision

B.Sc Sem III Basic English:

Prose: Revision

Grammar: Revision

B.Sc Sem III Add. English:

Text: Critical Analysis of the Play

Grammar: Revision

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan. December/ January

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Chameleon

2) False Gems

Poetry: 1) Telephone conversation

2) A Diameter of the Bomb

Grammar: 1) Wh Questions

B.Sc. II Add English:

Tex : The Cutting Edge -1) Introduction

2) Rene Descartes

Grammar: 1) Words as different parts of speech

Sem IV Basic:

Unit 9 - Pushing the Earth Towards Sixth Mass Extinction

Unit -10- Saving Marine Life

Unit 13- Mountains

Unit14 - Urbanization

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Text introduction & Chapters : 1- 5

HOD

LANGUAGE DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan. February 2020

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Duty

2) Our Home in Space

Poetry: 1) This is photograph of Me

Grammar: 1) Synonyms and Antonyms

2)Speech Skills

B.Sc. II Add English:

Text : The Cutting Edge

1) Werner HeiSienberg
2) Antoine Lavoisier

Grammar: 1) Relative Clauses

Sem IV Basic:

Unit 15 – Are We too late ?

Unit -11 – Forests Why forests are Important

Grammar :1) Direct and indirect speech

2Correction of sentences

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Chapters : 6-12

Grammar :1 Story writing

2)Arranging sentences

HOD

LANGUAGE DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan. March 2020

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) The Secret of Work

Poetry: 1) The Emperor of Ice Cream

2) Hunger

Grammar: 1) Preparing CV/Resume

2) Preparing Advertisements

B.Sc. II Add English:

Text : The Cutting Edge

1) Ivan Pavlov

2) Sigmund Freud

Grammar: 1) Conditional Clauses

2) Describing People and Places

Sem IV Basic:

Unit 12 – Wanted Seas and Oceans Dead or Alive

Unit 16– Career - Are you game for Wild Life Studies

Grammar : 1) Active and Passive - Conversion

2) Paragraph writing

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Chapters : 13 – 20

Grammar :1 Letter Writing

HOD

LANGUAGE DEPATMENT OF LANGUAGES (ENGLISH)

2019-20

Monthly Teaching Plan. April 2020

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: Revision

Poetry: Revision

Grammar: 1) Revision

B.Sc. II Add English:

Text : The Cutting Edge

1) Revision

Grammar: Revision

Sem IV Basic

Units Revision

Grammar : 1) Revision

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Critical Analysis & Revision

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan

26th June to 31st July 2018-19

B.SC SEMESTER I

BASIC ENGLISH:

Prose: 1. Time To Ignite The Minds of People

2. The Portrait of a Lady

Poetry: 1. The Purdha Nashin

2. Delhi

Grammer: (none)

ADDL. ENGLISH: 1. The Seven Slaves

2. The Night Watches

Grammer: (none)

SEMESTER III

BASIC ENGLISH

Fco English : Unit 1) Will The World Come To An End?

2) Noah Today

3) Animal Farm

4) Rivers

Grammar : 1) Communication Skills

ADD ENGLISH:

1) The Play : Final Solution – Text introduction & Act I
2) Futurity in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan August 2018

B.Sc Semester I

Basic English:

Prose: 1) The Coffee House of Surat – Tolstoy

2) Science and Religion by Dr S Radhakrishnan.

Poetry: 1) Blossoms

2) Mirror

Grammar: 1) Use of articles

2) Propositions (types)

3) Self Introduction & Introducing chief Guest, Principal, Friend etc.

Add. English:

Text: One Good Turn

Grammar: 1) Use of Words, Idioms and Phrases to form Sentences

2) Sentence Linkers

Semester III

Basic English

Eco English : Unit 3) Happy Man Shirt

6) Rivers

5) Global Warming

Grammar : 1) One word substitutes 2) Interpretation of Notices using words

Add English:

1) The Play : Final Solution – Act II

Grammar : Determiners in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan September 2018

B.Sc Semester I

Basic English:

Prose: 1) No. 5 Good Manners

Poetry: 1) No. 4 No second Troy

Grammar: 1) Report writing

2) Dialogue writing

3) Transformation of sentences.

Add. English:

Text: 1) No 3 Unexpected

2) Sunday costs Five Pesos

Grammar: 1) Writing descriptions

Semester IV

Basic English

Eco English : Unit 4) Pollution

Grammar : 1) Paraphrasing prose and verse

Add English:

1) The Play : Final Solution – Act III

2) Futurity in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan October 2018

B.Sc Semester I

Basic English:

Prose &Poetry: Revision Exercises

Grammar: Revision Exercises

Add. English:

Grammar Revision Exercises

Semester IV

Basic English

Eco English : Revision Exercises

Grammar : Revision Exercises

Add English:

1) The Play : Final Solution – Critical Analysis

Grammar : Revision Exercises

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan. December/ January 2019

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Chameleon

2) False Gems

Poetry: 1) Telephone conversation

2) A Diameter of the Bomb

Grammar: 1) Synonyms and Antonyms

B.Sc. II Add English:

Text : The Cutting Edge -1) Introduction

2) Rene Descartes

3) Antoine Lavoisier

Grammar: 1) Words as different parts of speech

Sem IV Basic:

Unit 9 – Are we Heading Towards Sixth Mass Extinction

Unit -11- Forests Why Are Forests Important

Grammar : 1) Active & Passive Voice

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Text introduction

Grammar: Select Rightly Spelt Word

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly teaching plan. February 2019

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) The Secret of Work

Poetry: 1) This is a Photograph of Me

2) Hunger

Grammar: 1) Short Speech Skills

B.Sc. II Add English:

1) No. 3 Ivan Pavlov

2) No. 5 Sigmond Freud

Grammar: 1) Relative Clauses

Sem IV Basic:

Unit 13 –Saving Marine Life

Unit 12-Wanted Seas and Oceans Dead or Alive?

Unit -10- Mountains

Grammar : 1) Direct and Indirect speech

2) Application Letter

B.Sc. IV Add English:

The Novel : The Invisible Man – Ch. 5-10

Grammar: Letter Writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly teaching plan. March 2019

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Lesson 4 Duty

Poetry: 1) No. 5 The Emperor of Icecream

Grammar: 1) Wh Questions

2) Advertisements

3) CV/Resume Writing

B.Sc. II Add English:

1) Werner Heisienberg

Grammar: 1) Conditional Clauses

Sem IV Basic:

Unit 15 -Are We Too Late?

Unit -14- Urbanisation

Grammar : 1) Correction of Sentences

B.Sc. IV Add English:

The Novel : The Invisible Man – Ch. 11-15

Grammar: Arranging Sentences

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2018-19

Monthly Teaching Plan. April 2019

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Lesson 5 Our Home in Space

Poetry: Revision

Grammar: 1) Revision

B.Sc. II Add English:

1) Revision

Grammar: 1) Report Writing

Sem IV Basic:

1) Unit 16 – Are You A Game For Wild Life Career ?

2) Revision

Grammar : 1) Note Making

2) Revision

B.Sc. IV Add English:

The Novel : Critical Analysis

Grammar: Story Writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan

June & July 2017

B.SC SEMESTER I

BASIC ENGLISH:

Prose: 1. The Portrait of a Lady

2. Time To Ignite The Minds of People

Poetry: 1. The Purdha Nashin

2. Delhi

Grammer: 1) Self Introduction & Introducing chief Guest, Principal, Friend etc.

2) Report writing

ADDL. ENGLISH: 1. The Seven Slaves

2. One Good Turn

Grammer: 1) Sentence Linkers

SEMESTER IV

BASIC ENGLISH

Eco English : Unit 1) Will The World Come To An End?

2) Noah Today

3) Animal Farm

4) Pollution

Grammar : 1) Confusing Words

ADD ENGLISH:

1) The Play : Final Solution – Text introduction & Act I

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan August 2017

B.Sc Semester I

Basic English:

Prose: 1) Science and Religion by Dr S Radhakrishnan.

2) The Coffee House of Surat – Tolstoy

Poetry: 1) Blossoms

2) No second Troy

Grammar: 1) Use of articles

2) Propositions (types)

Add. English:

Text: The Night Watches

Grammar: 1) Use of Words, Idioms and Phrases to form Sentences

Semester IV

Basic English

Eco English : Unit 1) Happy Man Shirt

2) Rivers

3) Water

Grammar : 1) One word substitutes 2) Interpretation of Notices using words

Add English:

1) The Play : Final Solution – Act II

Grammar: 1)Use of adjectives and Adverbs

2) use of Determiners

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan September 2017

B.Sc Semester I

Basic English:

Prose: 1) Good Manners

Poetry: 1) Mirror

Grammar: 1) Dialogue writing

2) Transformation of sentences.

Add. English:

Text: 1) No.3 Unexpected

2) Sunday costs Five Pesos

Grammar: 1) Writing descriptions

Semester IV

Basic English

Eco English : Unit 8) Global Warming

Grammar : 1) Paraphrasing prose and verse

Add English:

1) The Play : Final Solution – Act III

2) Futurity in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan October 2017

B.Sc Semester I

Basic English:

Prose &Poetry: Revision Exercises

Grammar: Revision Exercises

Add. English:

Grammar Revision Exercises

Semester IV

Basic English

Eco English : Revision Exercises

Grammar : Revision Exercises

Add English:

1) The Play : Final Solution – Critical Analysis

Grammar : Revision Exercises

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan. December/ January

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) The Secret of Work

2) Duty

Poetry: 1) This is a Photograph of Me

2) Hunger

Grammar: 1) Short Speech Skills

B.Sc. II Add English:

1) No. 3 Ivan Pavlov

2) No. 5 Sigmond Freud

Grammar: 1) Relative Clauses

Sem IV Basic:

Unit 9 - Are we Heading Towards Sixth Mass Extinction

Unit -15- Are We Too late?

Grammar : 1) Active & Passive Voice

B.Sc. IV Add English:

1) The Novel : The Invisible Man – Text introduction

2) Chapters 1-6

Grammar : 1) Letter writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan. February 2018

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Chameleon

2) False Gems

Poetry: 1) Telephone conversation

2) A Diameter of the Bomb

Grammar: 1) Synonyms and Antonyms

B.Sc. II Add English:

Text : The Cutting Edge -1) Introduction

2) Rene Descartes

3) Antoine Lavoisier

Grammar: 1) Words as different parts of speech

Sem IV Basic:

Unit 11 - Forests why Are they Important

Unit -14- Urbanisation

Unit 16 – Are You A Game For Wild Life Career ?

Grammar : 1) Correction of Sentences

B.Sc. IV Add English:

The Novel : The Invisible Man – Ch. 7-12

Grammar : 1) Selecting correctly spelt word

HOD

EPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan. March 2018

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Our Home in Space

Poetry: 1) No. 5 The Emperor of Icecream

Grammar: 1) Wh Questions

2) Advertisements

3) CV/Resume Writing

B.Sc. II Add English:

1) Werner Heisienberg

Grammar: 1) Conditional Clauses

Sem IV Basic:

Unit 13 –Saving Marine Life

Unit 12- Wanted Our Seas and oceans in Dead or Alive?

Unit -10- Mountains

Grammar : 1) Direct and Indirect speech

2) Application Letter

B.Sc. IV Add English:

The Novel : The Invisible Man – Ch. 11-15

Grammar: Story Writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2017-2018

Monthly Teaching Plan. April 2018

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Lesson 5 Our Home in Space

Poetry: Revision

Grammar: 1) Revision

B.Sc. II Add English:

1) Revision

Grammar: 1) Report Writing

Sem IV Basic:

1) Revision

Grammar : 1) Note Making

2) Revision

B.Sc. IV Add English:

The Novel : Critical Analysis

Grammar: 1Rearrange sentences

2 Revision

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan

June & July 2016

B.SC. SEMESTER I

BASIC ENGLISH:

Prose: 1 Science and Religion by Dr S Radhakrishnan.

2. The Portrait of a Lady

Poetry: 1. The Purdha Nashin

2. Blossoms

Grammer: Use of articles

ADDL. ENGLISH: 1. The Seven Slaves

2. One Good Turn

Grammer: Words as different parts of speech.

SEMESTER IV

BASIC ENGLISH:

1) Soft Skills: An Introduction To The Text

2) The Boy Who Broke The Bank

3) White washing The Fence

Grammar : 1) Confusing words

ADD ENGLISH:

1) The Play : Julius Caesar– Text introduction & Act I & II

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan. August 2017

B.Sc Semester I

Basic English:

Prose: 1) Time to Ignite the Minds of People

2) The Coffee House of Surat – Tolstoy.

Poetry: 1)Mirror

2) Delhi

Grammar: 1) Prepositions

2) Transformation of sentences

Add. English:

Text: The Night Watches

Grammar: 1) Use of Words, Idioms and Phrases to form Sentences

B.Sc.Semester IV

Basic English

Text : 1) My Financial Career

2) The Verger

Grammar : 1) One word substitutes

2) Interpretation of Notices

Add English:

1) The Play : Julius Caesar – Act III

2) Sentence Linkers

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-17

Monthly Teaching Plan. September 2016

B.Sc Semester I

Basic English:

Prose: 1) Good Manners

Poetry: 1) No second Troy

Grammar: 1) Report writing

2) Dialogue writing

3) Self Introduction & Introducing chief Guest, Principal, Friend etc.

Add. English:

Text: 1) No.3 Unexpected

2) Sunday costs Five Pesos

Grammar: 1) Writing descriptions

Semester IV

Basic English

1)Three Questions

Grammar : 1) Paraphrasing prose and verse

Add English:

1) The Play: Julius Caesar Act IV

2) Futurity in English

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-17

Monthly Teaching Plan. October 2016

B.Sc Semester I

Basic English:

Prose &Poetry: Revision Exercises

Grammar: Revision Exercises

Add. English:

Grammar Revision Exercises

Semester IV

Basic English

Text Revision Exercises

Grammar : Revision Exercises

Add English:

1) The Play Julius Caesar– V & Critical Analysis

Grammar : Sentence Linkers

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan. December/ January 2017

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Chameleon

2) False Gems

Poetry: 1) A Diameter of the Bomb

2) Telephone conversation

Grammar: 1) Synonyms and Antonyms

B.Sc. II Add English:

Text : The Cutting Edge -1) Introduction

2) Rene Descartes

3) Antoine Lavoisier

Grammar: 1) Words used as different parts of speech

Sem IV Basic:

1) The look-out Man

2) The Light house Keeper of Aspinwall

Grammar : 1) Resume and Application Letter

B.Sc. IV Add English:

1) The Play :Tughlaq – Text introduction and Act I

2) Correction of Errors

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan. February 2017

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) The Secret of Work

Poetry: 1) This is a Photograph of Me

2) Hunger

Grammar: 1) Short Speech Skills

B.Sc. II Add English:

1) Ivan Pavlov

2) Sigmond Freud

Grammar: 1) Relative Clauses

Sem IV Basic:

1) Senor Payroll

2) A Real Good Smile

Grammar : 1) Direct and Indirect speech

2) Active & Passive Voice

B.Sc. IV Add English:

The Play :Tughlaq – Act II

Grammar : Letter Writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan. March 2017

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Lesson 4 Duty

Poetry: 1) No. 5 The Emperor of Icecream

Grammar: 1) Wh Questions

2) Advertisements

3) CV/Resume Writing

B.Sc. II Add English:

1) Werner Heisienberg

Grammar: 1) Conditional Clauses

Sem IV Basic:

1) Gateman's gift

Grammar : 1) Correction of Sentences

B.Sc. IV Add English:

Tughlaq – Act III

Grammar: Story Writing

HOD

DEPATMENT OF LANGUAGES (ENGLISH)

2016-2017

Monthly Teaching Plan. April 2017

B.Sc Semester II & IV

B.Sc Sem II Basic:

Prose: 1) Lesson 5 Our Home in Space

Poetry: Revision

Grammar: 1) Revision

B.Sc. II Add English:

1) Revision

Grammar: 1) Report Writing

Sem IV Basic:

1) Revision

Grammar : 1) Essay Writing

2) Revision

B.Sc. IV Add English:

The Play :Tughlaq Critical Analysis

Grammar: Revision

HOD

IQAC Coordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

HINDI

MONTHLY TEACHING PLAN

March

2020

B.Sc II Semester

1. मैं नीर भरी दुःख की बदली — महादेवी वर्मा
2. हिमालय के प्रति — रामधारी सिंह दिनकर
3. [illegible] कविता — अज्ञेय
4. मैं तुम लोगों से दूर हूँ — मुक्तिबोध
5. [illegible] — धूमिल
6. [illegible] — धर्मवीर भारती
7. [illegible] की ओर — नरेश मेहता

B.Sc IV Semester

[illegible]

1. [illegible] का सिपाही — अमृत राय
2. [illegible] — राजेन्द्र यादव
3.

IQAC Co-ordinator
GSS College, Belagavi

Principal
G.S.S. Sc. College, Bela[illegible]

HINDI

MONTHLY TEACHING PLAN

2020

February

B.Sc II semester

कविताएँ —

1 हिमाद्रि तुंग शृंग से — जयशंकर प्रसाद
2 किरण — " "
3 आओ फिर एक बार — सूर्यकान्त त्रिपाठी निराला
4 ताज — सुमित्रानंदन पंत
5 1st Internal Exam.
6 परीक्षा से सम्बंधित जानकारी

B.Sc IV semester

गद्य — 'गद्य अमृत'

1 आचरण की सभ्यता — सरदार पूर्णसिंह
2 सूखे पत्तों का भूगोल — शांति मधुकर
3 आकाश से बाहर ही है। [illegible]
4 1st Internal Test
5 परीक्षा में संदर्भ सहित प्रश्नों के उत्तर पर चर्चा

[signature]

HINDI

MONTHLY TEACHING PLAN

2020

January

B.Sc II Semester

पाठ्य पुस्तक — 'काव्य सरगम'

संपादक — 'डॉ. संतोष कुमार चतुर्वेदी'

कविताएं — 1. मनुष्यता — मैथिलीशरण गुप्त

2 प्रथम रश्मि का आना — सुमित्रानंदन पंत

3. चकवा — कीर्ति चौधरी

4 फसल — सर्वेश्वर दयाल सक्सेना

5. इंसान और कुत्ते — हरिवंशराय बच्चन

6. वह तोड़ती पत्थर — सूर्यकांत त्रिपाठी निराला

B.Sc IV Semester

गद्य पुस्तक — 'गद्य अमृत'

संपादक — डॉ. जोगेन्द्र सिंह बिसेन

1 तिन्नी कोठी वाला — रेखाचित्र — सरदार पूर्णसिंह

2 जिन्दगी का सच्चा स्वरूप — एकांकी — सेठ गोविन्ददास

3 मेरी मौत के बाद — व्यंग्य लेख — शरीफ चौधरी

4 बड़ौदा का अनुभव — आत्म कथा का अंश — डॉ. आम्बेडकर

5 जाना तो बाहर ही है — डायरी का अंश — मैत्रेयी पुष्पा

[illegible]

HINDI

MONTHLY TEACHING PLAN

2019

December and January

B. Sc II Semester

पाठ्य पुस्तक - 'काव्य सरिता'

संपादक - डॉ संतोष कुमार चतुर्वेदी

कविता - 1. मनुष्यता (मैथिलीशरण गुप्त)

2. प्रथम रश्मि का आना (सुमित्रानंदन पंत)

3. बकरी (कीर्ति चौधरी)

4. फसल (सर्वेश्वर दयाल सक्सेना)

5. इंसान और कुत्ते (हरिवंशराय बच्चन)

6. वह तोड़ती पत्थर (सूर्यकांत त्रिपाठी निराला)

B. Sc IV semester —

पाठ्य पुस्तक - 'गद्य आभा'

संपादक - डॉ. जोगेन्द्रसिंह बिसेन

1. चीनी फेरीवाला - रेखाचित्र - सरदार पूर्णसिंह

2. शिवाजी का सच्चा स्वरूप - एकांकी - सेठ गोविंददास

3. मेरी मौत के बाद - व्यंग्य लेख - लतीफ घोंघी

4. बडौदा का अनुभव - आत्मकथा का अंश - डॉ आम्बेडकर

5. जाना तो बाहर ही है - डायरी का अंश - मैत्रेयी पुष्पा

(Mrs S.S Joshi)

HINDI

MONTHLY TEACHING PLAN

2019

February

B. Sc. II semester

कविताएं -

1. हिमाद्रि तुंग शृंग से — जयशंकर प्रसाद
2. विनय — " "
3. जागो फिर एक बार — सूर्यकांत त्रिपाठी निराला
4. [illegible] — सुमित्रानंदन पंत
5. 1st Internal Exam -
6. परीक्षा संबंधी जानकारी

B. Sc. IV semester -

गद्य — 'गद्य अमृत'

1. आचरण की सभ्यता — सरदार पूर्णसिंह
2. [illegible] का भूगोल — [illegible]
3. भारत तो बाहर ही है। का शेष भाग
4. 1st Internal Exam
5. परीक्षा से संबंधित जानकारी

[signature]

(Mrs S. S. Joshi)

HINDI

MONTHLY TEACHING PLAN

2019 March

B.Sc II semester

1 मैं नीर भरी दुख की बदली — महादेवी वर्मा
2 हिमालय के प्रति — रामधारी सिंह दिनकर
3 यह दीप अकेला — अज्ञेय
4 मैं तुम लोगों से दूर हूँ — मुक्तिबोध
5 [illegible] — धर्मवीर भारती
6 घर की ओर — नरेश मेहता
7 [illegible] — [illegible]
8 2nd Internal Test

B.Sc IV semester

[illegible]

1 कलम का सिपाही — अमृत राय
2 मेरा [illegible] मेरा देश — राजेन्द्र [illegible]
3 [illegible] — रामधारी सिंह [illegible]
4 2nd Internal Test —

[signature]
(Mrs S S Joshi)

HINDI

MONTHLY TEACHING PLAN

2019-20

June ~~and July~~

B Sc I Semester

पाठ्य पुस्तक - "अभिनव कथा भारती"

कहानी - "चीफ की दावत"

लेखक - भीष्म साहनी

B Sc III Semester

पाठ्य पुस्तक - नाटक - आधे अधूरे

लेखक - मोहन राकेश

नाट्य परिभाषा, नाटक की उद्भव एवं विकास

नाटक के तत्व

(signature)

(Mrs S. S. Joshi)

HINDI

MONTHLY TEACHING PLAN

July 2019.

B.Sc I Semester

"अभिराम कथा भारती"

कहानी - 1 पूस की रात

लेखक - प्रेमचंद

2. 'त्रिवेणी'

लेखक — 'जैनेन्द्र'

3. 'बदला'

लेखक — 'अज्ञेय'

4. मक्रील

लेखक — 'यशपाल'

5. Seminar - from Students

B.Sc III Semester

नाटक - "आधे अधूरे"

लेखक - 'मोहन राकेश'

नाटक का [illegible]

Seminar —

(Mrs S S Joshi)

HINDI

MONTHLY TEACHING PLAN

2019

August

B.A. I Semester —

कहानियाँ — 1 'चीफ की दावत'

लेखक – "भीष्म साहनी"

2. 'गर्मियों के दिन'

लेखक – 'कमलेश्वर'

3 'बहादुर'

लेखक – 'अमरकांत'

4 'ठेस'

लेखक – 'फणीश्वर नाथ रेणु'

5 'महुए का पेड़'

लेखक – 'मार्कण्डेय'

B.A. II semester

नाटक — "आधे अधूरे"

लेखक – "मोहन राकेश"

नाटक का उपसंहार

S.Joshi
(Mrs. S. S. Joshi)

HINDI

MONTHLY TEACHING PLAN

2019

September

B Sc I Semester

कहानियाँ — 1. "यही सच है"
लेखक — "मन्नू भंडारी"
2. "नेलकटर"
लेखक - "उदय प्रकाश"
3. "सिरी उपमा जोग"
लेखक — "शिवमूर्ति"
4. "महुए का पेड़"
लेखक - [illegible]
5. सेमिनार ([illegible])

B Sc III Semester

आधे अधूरे नाटक के उत्तरार्द्ध का शेष भाग।
सेमिनार

(Smt S S Joshi)

HINDI

MONTHLY TEACHING PLAN

2019

October

B. A. I Semester

Internal Examinations

Seminar

Home Assignments

छात्रों की कठिनाईयों का हल

B. A. III Semester

नाटक – आधे अधूरे

Seminar

छात्रों के द्वारा नाटक के पात्रों की प्रासंगिकता पर चर्चा

Internal Examinations

[illegible]

(Smt S. S. Joshi)

HINDI

MONTHLY TEACHING PLAN

2018 - 19

June and July

B Sc I Semester

पाठ्य पुस्तक – अभिनव कथा & सरिता

कहानी – 1 "पूस की रात"
लेखक - 'प्रेमचंद'
2. "त्रिवेणी"
लेखक – 'जैनेन्द्र'
3. 'बदला'
लेखक – 'अज्ञेय'
4. "मकड़ाल"
लेखक – 'यशपाल'

B Sc III Semester

नाटक – "आधे अधूरे"
लेखक – "मोहन राकेश"
नाटक का पूर्वार्द्ध

Sujata

(Mrs S S Joshi)

HINDI

MONTHLY TEACHING PLAN

2018-19

August

B.Sc. I semester —

कहानी — 1. 'चीफ की दावत'

लेखक — "भीष्म साहनी"

2 गर्मियों के दिन

लेखक — कमलेश्वर

3. बहादुर — अमरकान्त

4 ठेला —

लेखक — फणीश्वर नाथ रेणु'

5 महुए का पेड़

लेखक — मार्कण्डेय

B.Sc. III semester

नाटक — "आधे अधूरे"

लेखक — 'मोहन राकेश'

नाटक का आधार

Signature

(Mrs S. S. Joshi)

HINDI

MONTHLY TEACHING PLAN

2018-19

September

B.Sc. I Semester

कहानी - 1 "यही सच है"

लेखक - "मन्नू भंडारी"

2 "लेलकटर"

लेखक - "उदय प्रकाश"

3 "हिंदी आत्मकथा"

लेखक - "विश्वभूति"

4 "महुए का पेड़"

लेखक - "मार्कण्डेय"

5 सेमिनार (विद्यार्थियों द्वारा)

B.Sc. II Semester

आधे अधूरे नाटक के उत्तरार्द्ध

का शेष भाग

-ssjosh

(Mrs. SSJoshi)

HINDI

MONTHLY TEACHING PLAN

2018-19

October

B.Sc. I semester

- Internal Examinations
- Home Assignments
- Seminar
- Revesion

B.Sc. III semester

- नाटक - आधे अधूरे
- Internal Examinations
- Home Assignments
- Seminar
- चर्चा (नाटकों के पात्रों पर)

(Smt. S S Joshi)

HINDI

MONTHLY TEACHING PLAN

Jun-July 2017-18

B Sc I Semester

अभिनव कथा भारती

व्याकरण – अधिकारी शब्द

आवेदन रचना –

1 पाठ्य पुस्तक परिचय

2 हिन्दी भाषा का महत्व

3 कहानी – 1 'पूस की रात' – प्रेमचंद

2 'नीलेली' – जैनेन्द्र

3 'बदला' – अज्ञेय

4 मक्रील – यशपाल

5 सेमिनार – विद्यार्थियों द्वारा प्रस्तुतीकरण

B Sc III Semester

नाटक – "आधे-अधूरे"

नाटककार – "मोहन राकेश"

नाटक का पूर्वार्द्ध

सेमिनार –

[signature]

HINDI

MONTHLY TEACHING PLAN

August 2017

1st Sr I semester —

कहानी — 1 'चीफ की दावत'

लेखक — "भीष्म साहनी"

2 'गर्मियों के दिन'

लेखक — 'कमलेश्वर'

3 'बहादुर'

लेखक — 'अमरकांत'

4 'ठेस'

लेखक — 'फणीश्वर नाथ रेणु'

5 'महुए का पेड़'

लेखक — 'मार्कण्डेय'

सेमिनार — सामान्य विषय अथवा किसी कथा पर।

1 Sr III Semester

नाटक — "आधे अधूरे"

लेखक — 'मोहन राकेश'

नाटक का आस्वाद

सेमिनार — नाटक के तत्वों पर

Sd/-

HINDI

MONTHLY TEACHING PLAN

September – 2017 - 18

B. Sc I Semester

कहानियाँ – 1 "यही सच है"

लेखक – "मन्नू भंडारी"

2 "नेलकटर"

लेखक – "उदय प्रकाश"

3 "सिरी उपमा जोग"

लेखक – "शिवमूर्ति"

4 "भूख का पेड़"

लेखक – "मार्कण्डेय"

5 सेमिनार

B. Sc. III Semester

आधे अधूरे नाटक के प्रकाशित का शेष भाग

सेमिनार

HINDI

MONTHLY TEACHING PLAN

2017 - 18

October

B.Sc. I semester

Internal Examinations

Home Assignments

छात्रों की कठिनाईयों का हल

B.Sc. III semester

नाटक आधे अधूरे

छात्रों के साथ नाटक के पात्रों की मानसिकता एवं अधूरे ~~अस्तित्व~~ व्यक्तित्व पर चर्चा

Internal Examinations

Monthly Teaching Plan 2015-16

HINDI

B.Sc. IV semester

आठ एकांकी एवं निबंध

संपादक — देवेन्द्र राज अंकुर
महेश आनंद

I was on leave from 18 Dec. 2015 to 27 Jan. 2016.

February 2016

1. तांबे के कीड़े (भुवनेश्वर प्रसाद)
2. औरंगजेब की आखिरी रात (रामकुमार वर्मा)
3. लक्ष्मी का स्वागत (उपेन्द्रनाथ अश्क)

From 13th to 20th Feb. 1st Internal Examinations

March —

4. रीढ़ की हड्डी
5. संस्कार और भावना
6. बहुत बड़ा सवाल
7. बसंत ऋतु का नाटक
8. हरे [illegible] पर ठहरे आदर

Seminar

2nd Internal Examinations

Monthly Teaching Plan 2015-16

HINDI

B.Sc II SEMESTER

काव्यामृत एवं निबंध

संपादक - डा. शिवाजी थाले
डा. हरेश स्वामी

From December 18th to January 29 I was on Earn Leave

February 2016

कविता —

1 कर्मवीर - (अयोध्यासिंह उपाध्याय हरिऔध)
2 पुष्प की अभिलाषा (माखनलाल चतुर्वेदी)
3 एकता (मैथिलीशरण गुप्त)

17th Feb to 20th Feb
1st Internal Examination

March

4 बीती विभावरी जाग री (जयशंकर प्रसाद)
5 [illegible] झूमती दूर आता है। (महादेवी वर्मा)
6 यह दीप अकेला (अज्ञेय)
7 दोनों की कुर्बानी (गिरिजा कुमार माथुर)
8 उषा सुन्दरी (सुमित्रानंदन पंत)
9 सिन्दूर तिलकित भाल (नागार्जुन)
10 रोटी और संसद (धूमिल)
11 एक आशीर्वाद (दुष्यन्त कुमार)
12 वह तोड़ती पत्थर (निराला)

Monthly Teaching Plan

B. Sc. I[st] Sem 2020-21 MARATHI

New Syllabus

'माझ्या बापाची पेंड' (कथासंग्रह) - प्रा. द. मा. मिरासदार

October - प्रा. द. मा. मिरासदार यांची साहित्य संपदा, मराठी साहित्याच्या ओळख्यात परिचय, कथेचे स्वरूप, वैशिष्ट्ये - चर्चा.

November - विनोदी साहित्य - प्रकार, मराठी विनोदी कथांची वाटचाल, माझ्या बापाची पेंड - लेखकांच्या शालेय जीवनातील विनोदी प्रसंग, झोप - नागू गवळ्याच्या प्रगतीच्या आड येणारी झोप, चाळीस पत्रिका चोरी - चौकशी करण्यासाठी आलेल्या लोकांपासून झालेला ताप, व्यक्तिचित्रण निबंधलेखन

December - भावकी - भावकीतील भांडणे, लहान मुलांच्या निरागसपणा, कोणे एके काळी - सुंदरीच्या प्राप्तीसाठी केलेली धडपड, हजांकूची शिकवणी, हरवलेल्या याचा शोध, कळत टिपा, संदर्भ अभ्यास चर्चा

Jan/Feb नवव्याण्णवबादची मुक्त सफर - कमनशीबी, नव्व्याण्णवव गोष्टी खोट्या बोलणारा नानाचोळे सोन्या बामण - लबाड, अफरातफर करणाऱ्या सोन्या बामणाचे व्यक्तिचित्रण, रानमाणूस - अंथरुणात्त निघून अनवाणी कुत्रा साहित्यावर उत्तरे, निबंध चर्चा, उजळणी

Principal
... Sc. College, Belagavi
GSS College, Belagavi

Ashwini R. Patil
(Dr. Lal Marathi)

Monthly Teaching Plan

B. Sc. IIIrd Sem. 2020-21 — MARATHI

'बनगरवाडी' (कादंबरी) - व्यंकटेश माडगूळकर

October – कादंबरी स्वरूप विशेष, कादंबरीचे प्रकार, प्रादेशिक कादंबरी - चर्चा, कादंबरीचा विषय - मास्तरांचे बनगरवाडी जीवन, लेखक व्यंकटेश माडगूळकरांचा परिचय आणि साहित्य संपदा.

November -- कादंबरी चर्चा सुरू – शिक्षक राजाराम कोंडणीकर यांचा प्रवास, बनगरवाडीतील दैनंदिन जीवन, मागासलेपणा, शिक्षणा- -बद्दलची उदासीनता -- विवेचन निबंध लेखन चर्चा.

December – बनगरवाडीतील प्रमुख व्यक्तिरेखा - शिक्षक राजाराम, कारभारी, आंजी, शेकू व शेकूची आयको, आनंदा रामोशी इ. चे जीवन, ग्रामीण जाणीवा – चर्चा, टिपा व संदर्भ लेखन.

Jan/Feb – बनगरवाडीला राजाची भेट, सुगीचा आनंद, मायाक्का बाईची जत्रा, अंधश्रद्धा, तालमीचे बांधकाम, भुरटेपणा, अखेरचा दुष्काळ इ. चर्चा, सविस्तर उत्तर लेखन

(signature)
Ashwini R. Patil
(Dept. of Marathi)

Monthly Teaching Plan

B.Sc. Ist Sem 2019-20 MARATHI

'नागमंडल' (कथासंग्रह) - डॉ. अरुणा ढेरे

June 2019 - मराठी साहित्याचा इतिहास - परिचय कथेचे स्वरूप आणि वैशिष्ट्ये - चर्चा, डॉ. अरुणा ढेरे यांची साहित्य संपदा

July 2019 - नाग सर्पाच्या दंतकथा, सर्पाचे वैद्यकीय उपयोग; 'लक्ष्मी' - जी. ए. कुलकर्णी, 'नागीण' - चारुता सागर, नागसर्पाचे अस्तित्व, नाग-नागिणीचे अतुट प्रेम, व्यक्तिचित्रणे, निबंध विषय - चर्चा

Aug 2019 - कथा अभ्यास 'पेरणी' - मधु मंगेश कर्णिक 'भुजंग' - शंकर पाटील - शेतकऱ्यांचे कष्ट, जनाईने संसारासाठी केलेली धडपड, टिप व संदर्भ अभ्यास चर्चा.

Sept 2019 - कथा अभ्यास - 'तळपट' - जी. ए. कुलकर्णी 'दवणा' - विद्याधर पुंडलिक, वानख्याचा तळपट होऊन आलेला मृत्यू, देवसर्पाची कहाणी, सविस्तर उत्तरे, लेखन व चर्चा कथाकथन.

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(Sonali B. Kangale)
(Dept of Marathi)

Monthly Teaching Plan

B.Sc II[nd] Sem 2019-20 MARATHI

'द कलाम इफेक्ट' (अनुवाद) - पी. एम. नायर

Dec. 2019 - लेखकांची संपूर्ण माहिती, अनुवाद या साहित्य प्रकाराची संकल्पना, अनुवाद क्षेत्रातील संधी, अब्दुल कलामांचे वेगळेपण - चर्चा.

Jan 2020 - डॉ. ए. पी. जे. अब्दुल कलामांचे जीवन, शिक्षण, नोकरी संघर्ष; पी. एम. नायर यांचा कलामांचे सचिव म्हणून आलेला अनुभव - विवेचन.

Feb. 2020 - अब्दुल कलामांचे भारताचे ११वे राष्ट्रपती म्हणून कार्य, कलामांची दिनचर्या, हजरजबाबीपणा, विलक्षण स्मरणशक्ती, साधी राहणी उच्च-विचारसरणी.

March - 2020 - अब्दुल कलामांचे परदेशी दौरे, उच्च नैतिक मूल्ये, कलामांच्या शिक्षणविषयक विचार, कोलचे भोळे अनुयायी ... न्यायवादी, धर्मनिरपेक्षपणा इ. गुणांचे विवेचन

(Sonali D. Kangale)
(Dept of Marathi)

Monthly Teaching Plan

B.Sc. III[rd] Sem. 2019-20 — MARATHI

'बनगरवाडी' (कादंबरी) - व्यंकटेश माडगूळकर

June 2019 — कादंबरी स्वरूप विशेष, कादंबरीचे प्रकार, प्रादेशिक कादंबरी - चर्चा, कादंबरीचा विषय - मास्तरांचे अमास्तरी जीवन, लेखक व्यंकटेश माडगूळकरांचा परिचय आणि साहित्य संपदा.

July 2019 — कादंबरी चर्चा सुरु - शिक्षक राजाराम औंधकर यांचा प्रवास, बनगरवाडीतील दैनंदिन जीवन, मागासलेपणा, शिक्षणा - बद्दलची उदासीनता - विवेचन, निबंध लेखन चर्चा.

Aug 2019 — बनगरवाडीतील प्रमुख व्यक्तिरेखा - शिक्षक राजाराम, कारभारी, आंजी, शेकू, न शेकूची बायको, आनंदा रामोशी इ. चे जगणे, ग्रामीण जाणीवा, - चर्चा, टिपा व संदर्भ लेखन.

Sept. 2019 — बनगरवाडीला राजाची भेट, कुस्तीचा आनंद, भावल्या आईची जत्रा, अंधश्रद्धा, तालमीचे बांधकाम, फुटकुटेपणा, अखेरचा दुष्काळ इ. चर्चा सविस्तर उत्तर लेखन.

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(Sonali B. Kangale)

(Dept. of Marathi

Monthly Teaching Plan

B.Sc. IV[th] Sem. 2019-20 MARATHI

'सुवर्ण गरुड' (ललित गद्य) - मारुती चितमपल्ली

Dec. 2019 - ललित गद्याची संकल्पना व स्वरूप, लेखक मारुती चितमपल्ली यांचा परिचय, साहित्य-संपदा, ललित गद्य अभ्यास.

Jan. 2020 - निसर्गविषयक प्रेम व आदर - चर्चा, अनामिका व गरुडाचे घर, मुळगामोर नकुळ, खोखर, फेरू, संध्यापक्षी, नाकेर पक्षी यांचे वेगळेपण व वैशिष्ट्ये.

Feb. 2020 - गारवी कद्या, फुनाद्दीमिया, रसूमजी चाचा, यांची व्यक्तिचित्रणे, स्वभाव-वैशिष्ट्ये व ग्रामीण जाणिवा - चर्चा

March 2020 - मनोली, वाघीण, अजगर, पांढरा भुजंग, या प्राण्यांचे जीवन, लेखकाची भाषाशैली, आदिवासींच्या श्रद्धा व समजुती - चर्चा, लेखन, परीक्षण इ.

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(Sonali S. Kangale)
(Dept of Marathi)

Monthly Teaching Plan

B.Sc. I[st] Sem 2018-19 MARATHI

'जनावंडल' (कथासंग्रह) - डॉ. अरुणा ढेरे

June 2017 - डॉ. अरुणा ढेरे यांची साहित्यसंपदा, मराठी साहित्याची थोडक्यात परिचय, कथेचे स्वरूप, वैशिष्ट्ये - चर्चा.

July 2017 - नागा कपाळीच्या देवकथा, 'लक्ष्मी' - जी. ए. कुलकर्णी, 'नागीण' - चालता बाजार - नागमणीचे अस्तित्व, नाग-नागिणीचे अतूट प्रेम, व्यक्तिचित्रणे, निबंध विषय चर्चा.

Aug 2017 - कथा अभ्यास 'पेरणी' - राघु मंगेश कार्णिक, 'भुजंग' - शंकर पाटील - शेतकऱ्यांचे कष्ट, भगिनीने संसारासाठी केलेली धडपड, टिपा व संदर्भ अभ्यास चर्चा.

Sept 2017 - कथा अभ्यास - 'सल्लपट' - जी. ए. कुलकर्णी, 'देवाण' - विद्याधर पुंडलिक, दानप्याचा लल्लपट होऊन झालेला मृत्यू, देवसर्पाची कहाणी, सविस्तर उत्तरे, लेखन व चर्चा, कथाकथन.

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(Dept. of Marathi)

Monthly Teaching Plan

B. Sc. II nd Sem 2018-19 MARATHI

'द कलाम इफेक्ट' (अनुवाद) - पी. एम्. नायर

Dec 2017 - लेखकांची संपूर्ण माहिती, अनुवाद या साहित्य प्रकाराची संकल्पना, अनुवाद क्षेत्रातील संधी, अब्दुल कलामांचे बालपण - चर्चा

Jan 2018 - डॉ. ए. पी. जे अब्दुल कलामांचे जीवन, शिक्षण, नोकरी संघर्ष, पी एम्. नायर यांचा कलामांचे सचिव म्हणून आलेला अनुभव - विवेचन

Feb 2018 - अब्दुल कलामांचे भारताचे ११ वे राष्ट्रपती म्हणून कार्य, कलामांची दिनचर्या, हुशार-जबाबदारपणा, विलक्षण स्मरणशक्ती, साधी राहणी उच्च विचारसरणी.

March 2018 - अब्दुल कलामांचे परदेशी दौरे, उच्च नैतिक मूल्ये, फाशीच्या शिक्षेविषयक विचार, कलेचे भोक्ते, बहुश्रुती व्यक्तिमत्त्व, ज्योतिषी, धर्मनिरपेक्षता इ. गुणांचे विवेचन.

Mangale
(Dept. of Marathi)

Monthly Teaching Plan

B.Sc. III[rd] Sem 2016-17 MARATHI

'बनगरवाडी' (कादंबरी) - व्यंकटेश माडगूळकर

June 2017 - व्यंकटेश माडगूळकर यांचा परिचय आणि साहित्य संपदा, कादंबरी स्वरूप विशेष; प्रादेशिक कादंबरी चर्चा, कादंबरीचा विषय - 'मास्तराचे अनुभवसंपन्न जीवन.'

July 2017 - कादंबरी चर्चा सुरू - शिक्षक राजाराम औंदळीकर यांचा प्रवास, बनगरवाडीतील दैनंदिन जीवन, साधासरळपणा, शिक्षणाबद्दलची उदासिनता - विवेचन, निबंधलेखन चर्चा.

Aug 2017 - बनगरवाडीतील प्रमुख व्यक्तिरेखा - शिक्षक राजाराम, कारभारी, अंजी, शेकू व शेकूची बायको, आनंदा रामोशी, इ. चे नाते, तत्कालीन जाणिवा, - चर्चा, टिपा व संदर्भ लेखन.

Sept 2017 - बनगरवाडीला राजाची भेट, सुगीचा आनंद; मावल्या आईची जत्रा, अंधश्रध्दा, तालमीचे बांधकाम, एकजुटपणा, अखेरचा दुष्काळ इ. चर्चा, सविस्तर उत्तर लेखन.

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(signature)
Dept. of Marathi

Monthly Teaching Plan

B.Sc. IV[th] Sem 2018-19 MARATHI

'सुवर्ण गरुड' (ललित गद्य) - मारुती चितमपल्ली

Dec 2017 - ललित गद्याची संकल्पना व स्वरूप, लेखक मारुती चितमपल्ली यांचा परिचय, साहित्य संपदा, ललित गद्य अभ्यास

Jan 2018 - निसर्गाविषयक प्रेम व आदर - चर्चा, सारिका व गरुडाचे दार, मुकणा मोर, उकुल, शेखर, फेरू, खंड्यापक्षी, लाकेर पक्षी यांचे वेगळेपण व वैशिष्ट्ये

Feb 2018 - गारवी, लक्ष्मा, मलाशीशिया, वस्तुसनी चाचा यांची व्यक्तिचित्रणे, स्वभाववैशिष्ट्ये व मानवी जाणिवा - चर्चा.

March 2018 - सोनोली, वाघीण अजगर, पांढरा भुजंग, या प्राण्यांचे जीवन, लेखकाची भाषाशैली, आदिवासींच्या श्रद्धा व समजुती - चर्चा, लेखन, परिसंवाद इ.

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(Dept. of Marathi)

IQAC Co-ordinator
GSS College, Belagavi

Principal
G. S. Sc. College, Belagavi

ಪಠ್ಯಕ್ರಮದ ಮಾಸಿಕ ಯೋಜನೆ (Dr. Sunanda M. Kolar, Dept of Kannada)
(Monthly Teaching plan)

ಬಿ.ಎಸ್ಸಿ ಮೊದಲನೆಯ ಸೆಮಿಸ್ಟರ್ - (ಸಿ.ಬಿ.ಸಿ.ಎಸ್)
೨೦೨೦-೨೧
(ಸಿ.ಬಿ.ಸಿ.ಎಸ್ ಹೊಸ ಪಠ್ಯಕ್ರಮ)

ಅಕ್ಟೋಬರ - ೨೦೨೦ (online classes conducted)

1) [illegible] - ರಂಜನ
2) [illegible] - [illegible]
3) [illegible] - ಡಾ. [illegible]
4) ಡಾ. [illegible]

ನವೆಂಬರ - ೨೦೨೦ - (online class)

5) [illegible] - [illegible]
6) ಡಿ. [illegible] - ಡಾ. [illegible]
7) ಡಿ. [illegible] - [illegible]
8) [illegible] - ಕೆ. ಎಸ್. [illegible]
9) [illegible] - ಡಿ. [illegible]

ಡಿಸೆಂಬರ - ೨೦೨೦ (online class and online Test conducted)

10) [illegible] - ಡಿ. ಆ. ಎಸ್. [illegible]
11) [illegible] - ಶ್ರೀ. [illegible]
12) [illegible] - [illegible]

* online Exams conducted (I[st] Test & II[nd] Test)

ಜನವರಿ - ೨೦೨೧ - ಫೆಬ್ರವರಿ - ೨೦೨೧

13) [illegible] - [illegible]
14) [illegible] - ಶ್ರೀ. [illegible]
15) [illegible] - [illegible]

* [illegible]
* [illegible]

Principal
G. S. Sc. College, Belagavi

Co-ordinator
GSS College, Belagavi

ಕೋಲಾರ
ಕನ್ನಡ ವಿಭಾಗ

ಮಾಸಿಕ ಬೋಧನಾ ಯೋಜನೆ

(Monthly Teaching plan)

ಬಿ. ಎಸ್. ಸಿ. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ -

೨೦೨೦-೨೧

ಅಕ್ಟೋಬರ್ - ೨೦೨೦ Online Classes ತೆಗೆದುಕೊಳ್ಳಲಾಗಿದೆ

1) [illegible] - ಶ್ರೀ [illegible]
2) [illegible] - [illegible]
3) [illegible] - ಡಿ. [illegible]
4) [illegible] - ಕೆ. ಎಸ್. [illegible]

ನವೆಂಬರ್ - ೨೦೨೧

5) ಕನ್ನಡಿಗರ ತಾಯಿ - ಎಂ. ಗೋವಿಂದ ಪೈ
6) [illegible] - ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
7) [illegible] - [illegible]
8) [illegible] - [illegible]
9) [illegible] - [illegible]

ಡಿಸೆಂಬರ್ - ೨೦೨೦

10) [illegible] - ಕೆ. ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
11) [illegible] - ಡಿ. [illegible]

→ online Internal ಪರೀಕ್ಷೆಯನ್ನು ತೆಗೆದುಕೊಳ್ಳಲಾಗಿದೆ.

12) ನನ್ನ [illegible] - [illegible]

ಜನವರಿ - ೨೦೨೧ - (Offline Classes conducted.)

13) [illegible] - [illegible]
14) [illegible] - [illegible]
15) [illegible]

ಫೆಬ್ರವರಿ - ೨೦೨೧

16) [illegible] - [illegible]

[signature]
Dept of Kannada

ವಿದ್ಯಾರ್ಥಿವಾರು ಮಾಸಿಕ ಯೋಜನೆ.
(Monthly Teaching plan)
ಬಿ.ಎಸ್.ಸಿ ಎರಡನೇ ಸೆಮಿಸ್ಟರ್
೨೦೧೯-೨೦

December / Jan - ೨೦೧೯-೨೦

1) ಜ್ಞಾನ ಶಾಕುಂತಲ - ಪು.ತಿ.ನ
2) ಕೊಡಗಿನ ಗೌರಮ್ಮ - ಜ.ನಾ. ತೇಜಶ್ರೀ
3) ನೀಲಿ ಪುಸ್ತಕ - ಡಾ. ಎಸ್. ನಟರಾಜ ಬೂದಾಳು
4) ದಿವ್ಯ ಶ್ರೀಗಳ ಶರಣರ ವಚನಗಳು - ಶೈಲಜಾ

Feb - ೨೦೨೦

5) ಪರಿಸರದ ಜೊತೆಯಲ್ಲಿ ಮಾನವ - ಡಿ. ಎಸ್. ನಾಗಭೂಷಣ
6) ಕನ್ನಡ ಕಥೆ - ಡಿ. ಎಸ್.
7) [illegible]

March - ೨೦೨೦

8) ಸಿಂಹಾಸನ - ಹಂಪ ನಾಗರಾಜಯ್ಯ
9) ಸಿಂಧೂರ - ಶೈಲಜಾ ಉಡಚಣ
10) ಡಿ. ವಿ. ಗುಂಡಪ್ಪ - ಲಕ್ಷ್ಮೀನಾರಾಯಣ
11) ಶ್ರೀ ಕೃಷ್ಣ - [illegible]

April / May - ೨೦೨೦

15) ಅನಾಥ ಮಗು - ಕಿರಣ - [illegible]
16) [illegible] - ಪಾರ್ವತಿ
17) [illegible] - ಪಿ. ಲಂಕೇಶ್

* [illegible]
* [illegible]
* [illegible]

Dept of Kannada

[illegible]

(Monthly Teaching plan)

[illegible]

೨೦೧೯-೨೦

Decembe/Jan-೨೦೧೯-೨೦

1) [illegible] - ಡಾ. ಜಿ. ಎಸ್. [illegible]
2) [illegible] - [illegible]
3) [illegible] - [illegible]
4) [illegible] - ಡಾ. [illegible]

Feb-೨೦೨೦

5) [illegible] - [illegible]
6) [illegible] - [illegible]
7) [illegible] - [illegible]

[illegible]

March-೨೦೨೦

8) [illegible] - [illegible]
9) [illegible] - ಡಾ. [illegible]
10) [illegible] - [illegible]
11) [illegible] - [illegible]

[illegible]

April-೨೦೨೦ - May-೨೦೨೦

→ [illegible]
→ [illegible]
→ [illegible]

[illegible] - 19 [illegible] online class [illegible]

[illegible signature]

[illegible] [illegible]

(Monthly Teaching plan)

ಕನ್ನಡ [illegible] [illegible] ೨೦೧೯-೨೦

[illegible]

ಜೂನ್ - ೨೦೧೯

೪. [illegible] - [illegible]

೫. [illegible] - [illegible]

೬. [illegible] - [illegible]

೧೦. [illegible] - [illegible]

ಜುಲೈ - ೨೦೧೯

೧೧. [illegible] - [illegible]

೨. [illegible] - [illegible]

೭. [illegible] - [illegible]

೧೨. [illegible] - [illegible]

[illegible]

[signature]

Dept of kannada

ಕಂಪ್ಯೂಟರ್ - ಪರಿಚಯ

೧. ಆಪರೇಟಿಂಗ್ ಸಿಸ್ಟಮ್ - ರಚನೆ.
ಕ) ವಿದ್ಯುನ್ಮಾನ ತಂತ್ರಜ್ಞಾನದ ಅಭಿವೃದ್ಧಿಯನ್ನು ವಿವರಿಸಿ.

೨. ಪ್ರೊಸೆಸರ್: ಕ) ಪ್ರೊಸೆಸರ್ ರಚನೆ ಮತ್ತು ಅದರ ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.

೩. ಕೆಲವು ಪದಗಳು: ಕ) ಬೈನರಿ ಪದ ಮತ್ತು ಬೈಟ್ ಅನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

ಬ. ಸಂಖ್ಯಾ ವ್ಯವಸ್ಥೆ ಕ) ದಶಮಾಂಶ ಸಂಖ್ಯೆಯನ್ನು ಅದರ ಸಮಾನ ಬೈನರಿ ಸಂಖ್ಯೆಗೆ ಪರಿವರ್ತಿಸಿ.

ಸಂಗಣಕ ವಿಜ್ಞಾನ ಪ್ರೌಢಶಾಲೆಯಲ್ಲಿ.

ಪ್ರೋಗ್ರಾಮಿಂಗ್ - ಪರಿಚಯ — ಕಂಪ್ಯೂಟರ್ - ಪರಿಚಯ

೬. ಕಾರಣಗಳು ಮತ್ತು ಕಾರ್ಯಗಳು.

ಅ. ಪ್ರಸ್ತುತತೆ ವಿವರಿಸಿ

ಆ. ಪ್ರಸ್ತಾಪಿಸಿ ಮತ್ತು ವಿವರಿಸಿ.

೬. ಪ್ರೋಗ್ರಾಮಿಂಗ್ ಅನ್ನು ವಿವರಿಸಿ.
* ಪ್ರೋಗ್ರಾಮಿಂಗ್ ಭಾಷೆಯನ್ನು ವಿವರಿಸಿ.
* ಕಂಪ್ಯೂಟರ್ ಸಿಸ್ಟಮ್ ಅನ್ನು ವಿವರಿಸಿ.

ಕಂಪ್ಯೂಟರ್ ಪರಿಚಯ

ಪ್ರಾಧ್ಯಾಪಕರ ಮಾಸಿಕ ಬೋಧನಾ ಯೋಜನೆ   III semester

(Monthly Teaching plan)

ಕನ್ನಡ ಭಾಷಾ ಪತ್ರಿಕೆ - ೨೦೧೯-೨೦.

ಬಿ.ಎಸ್.ಸಿ. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್.

ಜೂನ್ - ೨೦೧೯

೨. ಕನ್ನಡಿಗರ ಭಾಷೆ - ಎಂ. ಚಿದಾನಂದ ಮೂರ್ತಿ
ಈ ಲೇಖನದಲ್ಲಿ ಕನ್ನಡಿಗರ ಭಾಷೆಯನ್ನು
ಪರಿಚಯಿಸಲಾಗುತ್ತದೆ.

೩. ಕೃತ್ತ - ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ - ಈ ಕವಿತೆಯಲ್ಲಿ ಬದುಕನ್ನು
ಕುರಿತ ಪರಿಚಯಿಸಲಾಗುತ್ತದೆ.

೬. ನನ್ನ ಮನೆಯ ದೀಪ - ಡಾ. ಬಿ.ಆರ್. ಅಂಬೇಡ್ಕರ್ ರವರ ವಿಚಾರಗಳನ್ನು
ಈ ಲೇಖನದಲ್ಲಿ ಪರಿಚಯಿಸಲಾಗುತ್ತದೆ.

೪. ಚಿಕ್ಕನ ಬದುಕು : ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್ ರವರ ವಿಚಾರಗಳನ್ನು
ಈ ಕವಿತೆಯಲ್ಲಿ ತಿಳಿಸಲಾಗುತ್ತದೆ.

ಜುಲೈ - ೨೦೧೯

೧. ವಿಶ್ವ ವಿದ್ಯಾ ಜನನಿ ಶ್ರೀ ... - ಶ್ರೀ ... ರವರು
ಈ ಲೇಖನದಲ್ಲಿ ... ವಿಚಾರವನ್ನು
ಅರ್ಥಮಾಡಿಸಲಾಗುತ್ತದೆ.

೧೦. ಕಿಟ್ಟನ ಹಬ್ಬ - ಡಿ. ಆರ್. ... ರವರ ಈ ಲೇಖನವನ್ನು ಪರಿಚಯಿಸಲಾಗುತ್ತದೆ.

೧೧. ಜಾನಪದ ... - ... ಕನ್ನಡ

೧೨. ... - ... .

ಪಠ್ಯವನ್ನು ಪರಿಚಯ ಮಾಡಲಾಗುತ್ತದೆ.

ವರ್ಗ ಕೋಣೆಯಲ್ಲಿ ... ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ
ತಿಳಿಸಲಾಗುತ್ತದೆ.

Dept of Kannada

ಅಕ್ಟೋ - ೨೦೧೫

೨. [illegible] ! - ಈ ವಿಷಯದ ಕುರಿತು [illegible]
[illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

೬. [illegible] - [illegible]
- [illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

೧೨. ನನ್ನ [illegible]. ಡಾ. ರಾ. [illegible]
[illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

೧೪. [illegible].
ಈ [illegible]
[illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.
[illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

ನವೆಂಬರ್ - ೨೦೧೫

೭. [illegible] - [illegible]
ಈ ~~[illegible]~~ [illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

೮. [illegible] - ಡಾ. [illegible]
ಈ [illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು.

೧೫. [illegible]

೧೭. [illegible]? - ಡಾ. [illegible]
[illegible] ಏರ್ಪಡಿಸಲಾಗಿತ್ತು [illegible]

[illegible]
[illegible]

ಡಿಸೆಂಬರ್ ೨೦೧೫

-) [illegible]

[signature]
Head of Kannada

ಮಾಸಿಕ ಬೋಧನಾ ಯೋಜನೆ
(Monthly Teaching plan)

ಕನ್ನಡ ವಿಭಾಗ ... ೨೦೧೮

ಬಿ.ಎಸ್.ಸಿ. [illegible]

೨೦೧೮-೧೯

ಡಿಸೆಂಬರ್/ಜನವರಿ ೧೯

೪) [illegible]
೫. [illegible]
೬. [illegible]
೧. [illegible]
೨. [illegible]

ಫೆಬ್ರವರಿ - ೧೯

೭. [illegible]
೮. [illegible]
೯. [illegible]
೧೧. [illegible]
೧೨. [illegible]

ಮಾರ್ಚ್ - ೧೯

೬. [illegible]
೧೦. [illegible]
೧೨. [illegible]
೧೪. [illegible]

ಏಪ್ರಿಲ್ - ೧೯

೧೫. [illegible]
೧೬. [illegible]

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳ ಚರ್ಚೆ

ಕಿರು ಪರೀಕ್ಷೆ ನಡೆಸಲಾಗುವುದು.

ಮಾದರಿ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಲಾಗುವುದು.

[signature]
Dept of Kannada

ತಿಂಗಳವಾರು ಬೋಧನಾ ಯೋಜನೆ

(Monthly Teaching plan)

[illegible]

ಡಿಸೆಂಬರ್/ಜನವರಿ - ೧೬

೪. ಪ್ರೀತಿ ಇಲ್ಲದ ಮೇಲೆ - ಡಾ. ಹೆಚ್. ಎಸ್. ವೆಂಕಟೇಶಮೂರ್ತಿ

೫. [illegible]

೬. [illegible]

೭. [illegible]

ಫೆಬ್ರವರಿ ೧೬

೧. [illegible]

೨. [illegible]

೬. [illegible]

[illegible]

ಮಾರ್ಚ್ ೧೬

೭) [illegible]

೮) [illegible]

೧೦. [illegible]

೧೧. [illegible]

೧. ೨. ೩. ೪. ೫. [illegible]

[illegible]

೧೧. [illegible]

೭. ೨. ೮. ೬. ೧೦. [illegible]

ಪುನರಾವರ್ತನೆ

* [illegible]

* [illegible]

Dept of Kannada

ಪಠ್ಯಕ್ರಮದ ಮಾಸಿಕ ಯೋಜನೆ

(Montly Teaching plan)

ಕನ್ನಡ ಐಚ್ಛಿಕ ಪಠ್ಯ ೨೦೧೮-೧೯

೨ ನೇ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ.

ಜೂನ - ೨೦೧೮

೧. [illegible]

೨. [illegible]

೪. [illegible]

೬. [illegible]

೧೧. [illegible]

ಜುಲೈ - ೨೦೧೮

೨. [illegible]

೩. [illegible]

೫. [illegible]

೧೨. [illegible]

೧೩. [illegible]

[illegible]

ಆಗಸ್ಟ್ ೨೦೧೮

೭. [illegible]

೯. [illegible]

೧೦. [illegible]

೧೪. [illegible]

[illegible]

ಸೆಪ್ಟೆಂಬರ್ - ೨೦೧೮ / ಅಕ್ಟೋಬರ್ - ೨೦೧೮

೧೫. [illegible]

* [illegible]

[illegible]

[signature]

Dept of Kannada

[illegible]

(Monthly Teaching plan)

[illegible]

ಜೂನ್-೨೦೧೮

೧. [illegible]

೨. [illegible]

೩. [illegible]

೪. [illegible]

೫. [illegible]

ಜುಲೈ ೨೦೧೮

೬. [illegible]

೭. [illegible]

೮. [illegible]

೯. [illegible]

೧೦. [illegible]

ಆಗಸ್ಟ್ - ೨೦೧೮

೧೧. [illegible]

೧೨. [illegible]

೧೩. [illegible]

ಸೆಪ್ಟೆಂಬರ್ -೨೦೧೮ — ಅಕ್ಟೋಬರ್ - ೨೦೧೮

೧೪. [illegible]

[illegible]

೧೫. [illegible]

[illegible]

Head of Kannada

ತಿಂಗಳವಾರು ಪಾಠದ ಯೋಜನೆ.

(Monthly Teaching plan)

ಕನ್ನಡ ಐಚ್ಛಿಕ ವಿಭಾಗ

ಸಾಹಿತ್ಯ ಶಿಕ್ಷಣ - ಬಿ.ಎಸ್.ಸಿ. [illegible]

~~[illegible]~~ - ೧೮

ಡಿಸೆಂಬರ್-ಜನವರಿ ೨೦೧೮

೧. ಕಾವ್ಯ [illegible] - [illegible]

೨. [illegible] - [illegible]

೧೧. [illegible] - [illegible]

೧೨. [illegible] ಸಾಹಿತ್ಯ. ಎ. ಎನ್. [illegible]

ಫೆಬ್ರವರಿ ೨೦೧೮

೩. [illegible] - [illegible]

೪. [illegible] - [illegible]

೧೩. [illegible]

೧೪. [illegible]

ಮಾರ್ಚ್ - ೨೦೧೮

೫. [illegible]

೬. [illegible]

೧೫. [illegible]

[illegible] - [illegible]

[signature]

Dept of Kannada

ಪತ್ರಿಕಾ ಹಾಗೂ

೭. ನನ್ನ ಹಾಡಲ್ಲಿ

೮. ಎರಗಲಾಯ್ತು ಹುಟ್ಟು - ಸಿಗ್ತಾ! - ಜಯತೀರ್ಥ ರಾಜಪುರೋಹಿತ

೯. ಶೀರ್ಷಿಕೆ - ಸುಬ್ಬಣ್ಣ ರಂಗನಾಥ

೧೦. ವಿಂದಿಂಬ - ಡಾ. ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ

೧೧. ಶ್ರೀರಾಮಚಂದ್ರ ರೇಖೆ - ಪಾರ್ವತಿ ಮಹಾಲಿಂಗ ರಾಜ್ಯೋತ್ಸವ

೧೨. ಶೀಲ - ನೀಲಗಿರಿ ಶಿವ

ಎಲ್ಲ ಕವಿತೆಗಳು ಅಂತರಂಗ ಪರಿಚಯಕ್ಕೆ ಓದಿಕೊಳ್ಳುವುದು.

(Dept. of Kannada)

ಪಠ್ಯ ಕ್ರಮದ ಮಾಸಿಕ ಯೋಜನೆ
(Monthly Teaching plan)
ಕನ್ನಡ ಐಚ್ಛಿಕ ಪಠ್ಯ
ಬಿ. ಎಸ್. ಸಿ. ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್.
೨೦೧೮-೧೯.

ಡಿಸೆಂಬರ್/ಜನವರಿ ೨೦೧೯

೧. [illegible] - ಪಂಪ
೨. [illegible] - [illegible]
೩. [illegible] - ದ. ರಾ. ಬೇಂದ್ರೆ.
೪. [illegible] - [illegible].

ಫೆಬ್ರವರಿ ೨೦೧೯.

೮. [illegible] ಡಾ. ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೯. [illegible] - [illegible]
೧೦. ([illegible]) - [illegible].
೧೧. ಶ್ರೀರಾಮಾಯಣದರ್ಶನಂ - ಕುವೆಂಪು.
೧, ೨, ೩, ೪ [illegible] [illegible].

Sd/-
(Dept of Kannada)

ಮಾರ್ಚ್ ೨೦೧೪

೭. ಸೀಮಾಬಂಗಾರ ಪಾಳೆಯಗಾರರು

೮. ಶಂಕರಾಚಾರ್ಯ - ಡಾ. ಶಿವರಾಮ ಕಾರಂತ.

೧೧. ಶ್ರೀನಾಥ ಕಾಸಾಕ್ಷಿಯ- ಕಾವ್ಯಂ.

೫. ೬. ೭. ಪತ್ರಿಕೆಗಳು ಓದುಗಾರರು.

ಏಪ್ರಿಲ್ ೨೦೧೪

೧೦. ಶಿಷ್ಟ ಕನ್ನಡ - ನಾಗಾಭರಣ ಪಾಂಡುರಂಗರಾವ್

೧೧. ಶ್ರೀನಾಥ ಕಾಸಾಕ್ಷಿಯ- ಕಾವ್ಯಂ.

೮. ೯. ೧೦ ಪತ್ರಿಕೆಗಳು ಓದುಗಾರರು.

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ತಯಾರಿ ಮಾಡಲಾಗಿದೆ.

Dept of Kannada

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(Monthly Teaching plan)

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೧. [illegible]

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೪ [illegible]

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೧) [illegible]

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Dept of Kannada

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೭. [illegible] - [illegible]
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೮. [illegible] :- [illegible]
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[illegible]

೧೪. [illegible] - [illegible]
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೮. [illegible]
೯. [illegible] - [illegible]
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ಶೈಕ್ಷಣಿಕ ಮಾಸಿಕ ಯೋಜನೆ.

(Monthly Teaching plan)

ಕನ್ನಡ ಭಾಷಾ ವಿಭಾಗ

ದ್ವಿತೀಯ ಸೆಮಿಸ್ಟರ್ - ಬಿ.ಎಸ್ಸಿ. ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ

೨೦೧೭-೧೮

ಜೂನ್ - ೨೦೧೭

೧. ಚಿತ್ರಾಂಗದಾ [illegible] - [illegible]
೨. ಬಸವಣ್ಣನ ವಚನ - [illegible]
೩. [illegible]
೪. [illegible]

[illegible] (ಈ ಪಾಠಗಳ ಬಗ್ಗೆ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಪ್ರಶ್ನೋತ್ತರ ಚರ್ಚೆ ನಡೆಸಲಾಗುವುದು)

ಜುಲೈ - ೨೦೧೭

೫. [illegible]
೬. [illegible] - [illegible]
೭. [illegible]
೮. [illegible]

[illegible] (ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ... ನೀಡಲಾಗುವುದು)

ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ [illegible] Surprize Test [illegible] ಮಾಡಲಾಗುವುದು.

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Dept of Kan

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೬. [illegible]
೭. [illegible] } [illegible]

೧೩. [illegible] - [illegible]
೧೪. [illegible] - [illegible]

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೮. [illegible] - ಡಾ. [illegible]
೧೫. [illegible] - [illegible]
೧೬. [illegible] - ಡಾ. [illegible]
[illegible] ಪ್ರಕಟವಾಗಿರುತ್ತವೆ

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Dept of Kannada

ಪ್ರತಿಮಾಸದ ಬೋಧನಾ ಯೋಜನೆ
(Monthly Teaching plan)
ಕನ್ನಡ ಐಚ್ಛಿಕ ಪತ್ರಿಕೆ
೨೦೧೭-೧೮
೨೨ ಎಸ್.ಎ. ಎರಡನೆಯ ಸೆಮಿಸ್ಟರ್

ಡಿಸೆಂಬರ - ೨೦೧೭-
ವಿಷಯ -

೧. [illegible] - [illegible]
೨. [illegible]
೩. [illegible]
 - [illegible]
೧೪. [illegible] - [illegible]
೧೨. [illegible] - ಎ. ಎನ್. ಮೂರ್ತಿರಾವ್

ಜನವರಿ - ೨೦೧೮

೫. [illegible] - ದ. ರಾ. ಬೇಂದ್ರೆ
೬. ನೀನಿಲ್ಲದೆ? - ಕೆ. ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ
೭. [illegible] - ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೧೩. [illegible] - [illegible]
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 - ಡಾ. [illegible]

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Dept of Kannada

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(Monthly Teaching plan)
ಕನ್ನಡ [illegible]
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ಬಿ.ಎಸ್.ಸಿ ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್

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೧. [illegible] - [illegible]
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೫. [illegible] - [illegible]
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೭. [illegible] - [illegible]
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೧೦. ಕೆಲಸ ದಿನಗಳು

೧೧. [illegible] - [illegible]

೮. ೯. 10ನೇ [illegible]

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ವಿಶ್ವವಿದ್ಯಾಲಯ ಮಾಸಿಕ ಯೋಜನೆ

(Monthly Teaching plan)

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೧. [illegible] - [illegible] :- [illegible]

೨. [illegible] → [illegible] - [illegible]

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೧೦. [illegible] - [illegible]
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೫. [illegible] - [illegible]
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Dept of Kannada

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೭. [illegible]
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೯. [illegible] - [illegible]

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೭. [illegible]
೮. [illegible]
೯. [illegible]
೧೪ [illegible]
೧೫. [illegible]

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Dept of Kannada

ಪಠ್ಯಕ್ರಮದ ಮಾಸಿಕ ಯೋಜನೆ

(Monthly Teaching plan)

ಕನ್ನಡ ಐಚ್ಛಿಕ ಪತ್ರಿ

ಬಿ. ಎಸ್. ಸಿ. [illegible] ಸೆಮಿಸ್ಟರ್

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೧. [illegible] :- [illegible]

೨. [illegible] :- [illegible]

೫. [illegible] :- [illegible]

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೭. [illegible] - [illegible]

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Dept of Kannada

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೮. [illegible] - ಕೆ. ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ

೯. [illegible] - ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ

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೧೦. [illegible] - [illegible]

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೧೧. [illegible]

೧೨. [illegible]

೧೩. [illegible]

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Principal
G. S. Sc. College, Belagavi

Dept of Kannada.

[illegible] College, Belagavi

DEPARTMENT OF MATHEMATICS

G.S.S.COLLEGE BELGAVI

TEACHING PLAN

2020-2021

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH JAN 2021.

B.Sc I semester:
VVK: REAL NUMBERS: Inequalities &absolute valuesArchimedean Properties.examples.
NS: MEAN VALUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And Examples.
SAS:MATRICES: Determinants of fourth order and examples.
R DG: LIMITS AND CONTINUITY: Uniform continuity examples.
MSP: HIGHER ORDER DERIVATIVES Thenthderivativeof, $e^{ax}\cos(bx+c)$examples.Leibntz's Rule for nth derivative of a product and examples
B.Sc III semester:
NS: PAPER I: SEQUENCE –II : Cauchy's sequence, Cauchy's first and second theorems on limits. Examples.
RDG: PAPER II: DIFFERENTIAL EQUATION-I: Solution of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
VVK: PAPER II GROUP THEORY –II: Cyclic groups and its properties ,cosets.Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER I: Riemann Integration: Integration by parts examples. The first and second examples.
MSP: Beta and Gamma Function: Duplication formula, Double and triple integrals. Examples.
N.S: PAPERII: NUMERICAL DIFFERENTION: Forward and backward difference formulae. Computation of first and second ordered derivatives. General Quadruture formula, Trapezoidal rule,

IQAC Co-ordinator
GSS College, Belagavi

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G. S. Sc. College, Belagavi

Simpsons rules ,ordinary linear first order differential equation by Taylor's series Euler's Picard and Runge-kutta method of order two.
SAS: PAPER III: DYNAMICS: Apse and Apsidal distance and Apsidal angle. Motion of a projectile. **VVK: CALCULUS OF VARIATIONS:** Geodesic on a plane, sphere. Brachistochrome problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF FEB 2021.

B.Sc I semester:
NS: MEAN VALUE THEOREMS: Taylor's Theorem (with Sciomilch and Rouche's form of reminder), Maclaurin's series. And examples
VVK: LIMITS AND CONTINUITY: Recapitulation of real number system,Algebra of limits (without proof) And examples
SAS:MATRICES: Reciprocal determinants symmetric and skew symmetric determinants.
R DG:LIMITS AND CONTINUITY: Boundeness of continuous functions.
MSP: HIGHER ORDER DERIVATIVES The nth derivativeof, $e^{ax}\cos(bx+c)$examples.Leibnitz's Rule for nth derivative of a product and examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences, subsequences and examples
RDG: PAPER II: DIFFERENTIAL EQUATION-II: Solvable for p, Solvable for x, Solvable for y, Clairutu's equations reducible to clairatus form. Examples
VVK: PAPER II: GROUP THEORY I: Euler's theorem and Fermat's theorem and examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in parametric forms and examples
MSP:PAPER I:MATHEMATICAL LOGIC: Existential and universal quantifiers ,method of proof.
SAS: PAPER I: Lagranges method undetermined multipliers.
B.Sc V semester:
R.DG: PAPER I: Riemann Integration: Integration by parts examples. The first and second examples.(Bonnet and Weirstrass form) of integral calculus.
MSP: PAPER I:Beta and Gamma Function: Areas and volumes, Differentiation under integral sign and examples
N S: PAPER II: Difference Equations : Basic definitions ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients ,and examples

SAS : PAPER I: DYNAMICS :Motion of a Projectile in a resting medium under gravity. Direct and impact of elastic bodies.

CALCULUS OF VARIATIONS: Minimum surface of revolution ,Isoperimetric problems examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH DEC 2020.

B.Sc II semester:
NS: PAPERI: Introduction of polar coordinates points.
VVK : PAPER I: Introduction of Derivative of arc length.
R DG:PAPER I : Introduction of equation of limits and continuity of two variables functions. **Concavity of curves.**
SA:PAPER II Boolean Algebra : Introductionof Lattices
MSP: Introduction of sphere.
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES :Introduction , Infinite series and examples.
MSP: PAPER II: Fourier series: Introduction of Periodic functions,
VVK: PAPER II Group Theory III: Introduction of Normal sub-groups. **RDG: Differential Equation III** :Recap of Differential equation order and degree, linear and nonlinear differential Equation
SAS: PAPER I: VECTOR CALCULUS: Dot and cross product of vectors
B.Sc VI semester:
R.D.G: PAPER I: Differential Equations: Simultaneous differential equations with two and three varinbles.
V.V.K: Legendre equation and functions: Solutions of Legendre's equations in series.
N.S: PAPER – II: Complex Analysis : Analytic function. Cauchy-Riemann equation.
S.A.S :PAPER –III : Laplace transforms-: Definition, basic properties. **V.V.K: Topology-:** Open set, closed set, closure of a set.examples.

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G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH JAN 2020.

B.Sc II semester:
NS: PAPERI: Polar coordinates of point and polar curve..
MSP :PAPER II : Equation of spheres ,Section of a sphere by a plane. Equation of sphere through a circle.
R DG:PAPER I : Partial derivatives higher order partial derivatives and examples. convexity of curves.
S.AS: PAPER II Boolean Algebra: Algebraic structures. Principle of duality. and examples. **NUMBER THEORY:** Recap of division algorithm, properties of prime and composite numbers.
VVK PAPER I: Derivative of arc of length examples. Curvature ,Radius of curvature in Cartesian,Parametric,polar,pedal forms examples.
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series (Harmonic), Comparison tests (different forms). D'Alembert's ratio test, Raabe's test, Cauchy's integral test and Root test. and examples.
MSP: PAPER II Fourier series: Fourier series of functions of period 2π and $2l$ and examples.
RDG: PAPER II: Differential Equations III: Linear differential equation of n^{th} order with constant co-efficients.and examples.
VVK: Group Theory III: Quotient groups Homomorphism and Isomorphism of groups. Kernel of Homomorphism.
SAS: PAPER I: Vector calculus: PAPER I : The vector differential operator del. The gradient of a scalar point function, The directional derivative of function. And examples.
B.Sc VI semester:
R.D.G: PAPER I: Total differential equation, Condition of Integrability and its solutions.
V.V.K: PAPER I: Legendre equation and functions: Legendre's functions- first and second kind, Rodrigue's formula, Orthogonal properties.

N.S : PAPER II : Cauchy's Theorem , Morera's Theorem , Cauchy's Integral formula, Cauchy's Integral formula for derivatives
S .A.S: PAPER –III : Laplace transforms-: Laplace transforms of some common functions. First shifting theorem, change of scale property. **V.V.K: Topology-:** Neighborhood, limit points and derived sets, interior, exterior and boundary points of a set. And examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH FEB 2020.

B.Sc II semester:
NS: PAPERI: Angle between the radius vector and tangent at a point on the curve.
M.S.P: PAPER II : Equation of spheres through two given points as ends of a sphere. Equation to a tangent of a sphere, condition for tangency. Radical planes and examples.
R DG: PAPER I: Total derivatives and total differential, Homogeneous functions and examples, Points of inflexion of curves.
SA: PAPER II Boolean Algebra: Distributive and complimented lattices, Boolean lattice and Boolean algebra and examples. **NUMBER THEORY: Congruence's** and its properties, Fundamental theorem of arithmetic and examples.
VVK: PAPER I: Centre of Curvature, Evolutes and Involutes. Reduction formula for integration of $sin^n x, cos^n x$ and examples.
B.Sc IV semester:
NS : PAPER I: INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic). Comparison tests (different forms) and examples.
MSP: PAPER II: Fourier series: Fourier series of odd and even functions, half range sine and cosine series. And examples.
RDG: PAPER II:Differential EquationsIII :Particular integral when RHS is of the form e^{ax}, sinax, cosax, x^n, $e^{ax}v$ and xv where v is function of x
VVK: Group Theory III: Homomorphism and Isomorphism of groups. Kernel of Homomorphism. And properties
SAS: PAPER I: Vector calculus: Continuity and differentiability of a vector function. Derivatives of sum. Dot product, Cross product and Triple product of vectors. Constant vector functions, Partial differentiation of vector functions.
B.Sc VI semester:

R.D.G: PAPER I: Differential Equations : Series Solutions of Ordinary Differential Equations: Basic definitions, Power series, ordinary and singular points, Power series solutions of ODEs. Frobenius method. and examples.
V.V.K: Legendre equation and functions: Orthogonal properties. Legendre's polynomial, recurrence formulae Legendre's polynomial, recurrence formulae and example
N.S: PAPER – II:, Cauchy's inequality , Liouville's Theorem. Taylor's and Laurent's series, zeros and singularities of analytic functions.
S.A.S :PAPER –III : Laplace transforms-: Laplace transforms of periodic functions, Laplace transforms of derivatives and integrals, inverse Laplace transforms **V.V.K: Topology-:** Interior, exterior and boundary points of a set. and examples. Base & sub-base examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH MARCH 2020.

B.Sc II semester:
NS: PAPERI:. Angle of intersection of two curves Polar and pedal equation of the curves..
MSP: PAPER II : Cones: Equations of a cone, enveloping cone of a sphere, Right circular cone. and examples.
R.D.G: PAPER I: Euler's theorem on homogeneous functions and examples. Envelops and asymptotes.
SA: PAPER II Boolean Algebra: Boolean functions and expressions and examples. **NUMBER THEORY:** Bracket functions, Euler's functions, Fermat's Euler and Wilson's and examples.
V.V.K: PAPER I: Reduction formula for integration of Reduction formula for integration of. $cosec^n x, sin^m x. cos^n x, x^n e^{ax}$ and examples
B.Sc IV semester:
N S : PAPER I INFINITE SERIES : The P-series(Harmonic), Comparison tests (different forms), D'Alembert's ratio test and examples.
M S P: PAPER II Fourier series: Fourier series of odd and even functions, half range sine and cosine series. and examples.
R D G: PAPER II:Differential EquationsIII :.Homogeneous linear differential equation of n^{th} order and Equation reducible to the homogeneous linear form, and examples
V.V.K: Group Theory III: Kernel of Homomorphism. And properties
SAS: PAPER I :Vector calculus: The vector differential operator del. The gradient of a scalar point function. The directional derivative of function..
SAS: PAPER I :Vector calculus: The vector differential operator del. The gradient of a scalar point function. The directional derivative of function. Properties of gradient of vector function. Divergence and Curl of a vector point function. Properties of divergence and curl. Solenoidal and irrotational vectors.
B.Sc VI semester:

RD.G: PAPER I: Differential Equations : Partial differential equations of 1st order: formation of partial differential equation by eliminating arbitrary constants and functions. Lagrange's linear partial differential equation Pp + Qq = R and its solution. and examples
V.V.K: PAPER I: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae and examples.
MSP: PAPERI: Non-linear partial differential equations: Charpit's method. and examples
N.S: PAPER – II: Calculus of Residues, Residues Theorem, Jordan's lemma and Contour Integration. Rings, Properties of rings, sub rings, ideals, principle in commutative ring.
SAS :PAPER –III : Laplace transforms-: Heaviside function, Dirac-delta function, unit step function, convolution theorem and Laplace transforms method of solving differential equation of first and second order with constant coefficients **VVK: Topology-:** Separation axioms, T_1 & T_2 spaces (properties and examples).

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH APRIL 2020.

B.Sc II semester:
NS: PAPERI: Polar subtangent and polar sub-normal and examples
MSP : PAPER II : Cylinder : Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder.
R .D.G:PAPER I : Euler's theorem on homogeneous functions and examples. Envelops and asymptotes. Right circular cylinder. **Cylinder :** Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder
V.V.K : PAPER I : Reduction formula for integration$x^n e^{ax}$,$x^m(logx)^n$and examples. Right circular cylinder. **Cylinder :** Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder
SA:PAPER II Boolean Algebra: Boolean expressions and examples. **NUMBER THEORY :** Fermat's ,Euler and Wilson's Theorems, and examples.
B.Sc IV semester:
NS :PAPER I: INFINITE SERIES : D'Alembert's ratio test ,Raabe's test, Cauchy's integral test and Root test. and examples.
MSP: PAPER II: Fourier transforms: Finite sine and Cosine transforms. and examples.
RDG: PAPER II Differential EquationsIII :. Equation reducible to the homogeneous linear form, and examples
V.V.K: PAPER II: Group Theory III: Fundamental theorem of Homomorphism. **Infinite series III:** Absolute convergence and conditional convergence of series. Alternating series, Leibnitz theorem, Uniform convergence
SAS: PAPER I:. Properties of gradient of vector function. Divergence and Curl of a vector point function. Properties of divergence and curl. Solenoidal and irrotational vectors
B.Sc VI semester:
R.D.G: PAPER Differential Equations : .Non-linear differential equations of standard forms I,II,III and IV and examples

MSP: Linear partial differential equations with constant coefficient.
N.S: PAPER II: Rings and Integral domains: and maximal ideals in a commutative ring, quotient rings, homomorphism and isomorphism, and integral domains
SAS :PAPER III : Laplace transforms-: Laplace transforms method of solving differential equation of first and second order with constant coefficients **V.V.K: Topology-:** T_1 & T_2 spaces (properties and examples).

2019-2020

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JUNE 2019.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Recapitulation of limits and continuity. Algebra of limits (with proofs) and examples.
VVK: PAPER I: Introduction of Real numbers, Postulate.
SA: PAPER II :MATRICES: Solution system of Linear equation and examples.
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. and examples.
MSP: Introduction of nth derivative.
B.Sc III semester:
NS: PAPER I: SEQUENCE –I : Sequence , limit of sequence. and examples.
RDG: PAPER II:DIFFERENTIAL EQUATION-I: First order first degree equations and examples.
VVK: PAPER II: GROUP THEORY –I: Groups ,Abelian group and examples.
MSP: PAPER I: MATHEMATICAL LOGIC: Recapitulation of basic definitions and examples.
SAS: REAL ANALYSIS: Jacobians, properties and examples
B.Sc V semester:
R.G:PAPER I: Riemann Integration : Partition of an interval. The upper and lower Riemann sums & Riemann integrals. Monotonic functions and bounded functions having finite number of discontinuities. Fundamental theorem of integral calculus.
MSP: PAPER I Beta and Gamma Function: Properties, relation between beta and gamma function theorem.
N.S: PAPER II:NUMERICAL METHOD: Bisection method , Iterations method, Newoton-Raphson method And examples
SAS : PAPER III: DYNAMICS: Kinematics :Velocity and acceleration of a particle along a plane curve. **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JULY 2019.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY: Algebra of limits properties of continuous functions. Form examples.
VVK PAPERI: Consequence Inequalities and absolute values. Archimedean property,LUB,and GLB properties examples
SAS: PAPER II: MATRICES: Elementary transformations and examples
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. Euclidean algorithm, Reminder Theorem, Factor Theorem, Fundamental Theorem of algebra. and examples
MSP : PAPER I The nth $(ax+b)^n, \frac{1}{ax+b}, \sin(ax+b), \cos(ax+b), e^{ax}\ \sin(ax+b)$examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –I : Bounded and unbounded sequences and examples,convergent,divergent sequence
RDG: PAPER II: DIFFERENTIAL EQUATION-1: Linear differential equations. Homogeneous and reducible to homogeneous forms examples.
VVK: PAPER II GROUP THEORY –I: Standard examples of groups, properties of group. and examples
MSP: PAPER I:MATHEMATICAL LOGIC : Tautology and contradiction ,logical equivalence, converse examples. Application of integration for finding the length of arc and examples.
SAS: PAPER I :Lagranges mean value theorem for functions of two variables. Taylors theorem.
B.Sc V semester:
RDG: PAPER I: Riemann Integration: Necessary and sufficient conditions for integrability.Algebra of integral functions.
MSP PAPER I:Beta and Gamma Function: Relation between beta and gamma function examples their convergence. Duplication formula.
N.S: PAPER II: NUMERICAL METHOD: Gauss Siedal method, Jacobi iteration method .and examples.
SAS : PAPER III Radial and Transverse components of velocity and acceleration, tangential and normal components of velocity and acceleration
VVK :CALCULUS OF VARIATIONS: Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF AUG 2019.

B.Sc I semester:

NS: PAPERI: LIMITS AND CONTINUITY : Boundedness of continuous functions Uniform continuity.

VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples MEAN VALUE THEOREMS: Taylor's Theorem (with Sciomlch and Rouche's form of reminder), Maclaurin's series. And examples

SAS: PAPER II: MATRICES: Rank of Matrices, Reduction to normal forms, Inverse of matrix examples.

R DG:THEORY OF EQUATIONS: Relation between the roots and coefficients of general polynomial equation in one variable. If one of the root of an equation $a_0x^n + a_1x^{n-1} + - - - + a^n$ has one of its rational root is p\q then p is an exact divisior of a_n and q is an exact divisors of a_0. Solution of cubic and bi quadratic examples. **Trigonometry Expansions:** of sine and cosine functions, series of sines and cosines.

SET THEORY : Recapitulation of sets, Equivalence relation and examples. De Morgan's laws and examples

MSP: PAPERI: LIMITS AND CONTINUITY: Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty x\infty$Indeterminate forms:$0x\infty, -\infty, 0^0$ examples.

B.Sc III semester:

NS : PAPER I :SEQUENCEI : Oscillatory sequences, algebra of convergent sequences. Monotonic sequences .Theorems on monotonic sequences. And examples

RDG PAPER II: DIFFERENTIAL EQUATION-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact. And examples. Necessary and sufficient condition for the equation to be exact.

VVK PAPER II GROUP THEORY –I: Semi group, Subgroups and its properties, Permutation of group.

MSP: PAPER I: MATHEMATICAL LOGIC: Logical equivalence ,converse, inverse and contra –positive of an Implication examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian forms and examples

SAS: PAPER I :Maclaurian's theorem for two variables .Maxima and minima of two and three variables

B.Sc V semester:
R.G: PAPER – I: Riemann Integration: Integrability of continuous functions monotonic functions. Fundamental theorem of integral calculus, change of variables, Integration by parts
MSP: PAPER I:Beta and Gamma Function: Duplication formula and examples Differential under integral sign, examples.
N.S:PAPERII:NUMERICAL METHOD: $\Delta\,(delta), \nabla(Del), \& \; E(shieft)$ Definitions and their properties nth order difference of a polynomial.Newton Gregory forward and backward difference interpolation formula and examples Lagranges interpolation formula examples
SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates . **VVK :PAPER III** :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF SEPT 2019.

B.Sc I semester:
NS: PAPER I: Intermediate value theorem, Borel covering theorem.
VVK: PAPER I: MEAN VALUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And Examples.
SAS:PAPER II :MATRICES: Soluation of system of linear equations. Examples
R DG:Trigonometry: Hyperbolic functions, Logarithm of complex numbers examples. **SET THEORY: SET THEORY:** Partition of a set, Arbitrary unions and intersections. and examples countable and uncountable sets..
MSP:PAPERI:LIMITSANDCONTINUITY Thenthderivativeof. $e^{ax}\cos(bx+c)$examples.Leibnitz's Rule for nth derivative of a product and examples
B.Sc III semester:
NS: PAPER I: SEQUENCE –II : Cauchy's sequence, Cauchy's first and second theorems on limits. Examples.
RDG: PAPER II: DIFFERENTIAL EQUATION-I: Solution of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
VVK: PAPER II GROUP THEORY –II: Cyclic groups and its properties ,cosets,Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER I: Riemann Integration: Integration by parts examples. The first and second examples.
MSP: Beta and Gamma Function: Duplication formula, Double and triple integrals. Examples.
N.S: PAPERII: NUMERICAL DIFFERENTION: Forward and backward difference formulae. Computation of first and second ordered derivatives. General Quadrature formula, Trapezoidal rule, Simpsons rules ,ordinary linear first order differential equation by Taylor's series Euler's Picard and Runge-kutta method of order two.

SAS: PAPER III: DYNAMICS: Apse and Apsidal distance and Apsidal angle. Motion of a projectile.

VVK: CALCULUS OF VARIATIONS: Geodesic on a plane, sphere. Brachistochrome problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF OCT 2019.

B.Sc I semester:
VVK: PAPER I: MEAN VALUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And examples
NS: PAPER I: Uniform continuity And examples
SA:PAPER II :MATRICES: Inverse of matrix examples.soluation system of linear equation
R DG:PAPER II: Summations of trigonometric series. **SET THEORY** :Countable and uncountable examples
MSP:PAPER I: INDETERMINATES FORM :1^{∞}, ∞^{0} examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences, subsequences and examples
RDG: PAPER II: DIFFERENTIAL EQUATION-II: Solvable for p, Solvable for x, Solvable for y, Clairatu's equations reducible to clairatus form. Examples
VVK: PAPER II: GROUP THEORY I: Euler's theorem and Fermat's theorem and examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in parametric forms and examples
MSP: PAPER I: MATHEMATICAL LOGIC: Existential and universal quantifiers ,method of proof.
SAS: PAPER I: Lagranges method undetermined multipliers.
B.Sc V semester:
R.DG **: PAPER I: Riemann Integration:** Integration by parts examples. The first and second examples.(Bonnet and Weirstrass form) of integral calculus.
MSP: PAPER I:Beta and Gamma Function: Areas and volumes, Differentiation under integral sign and examples
.S: PAPER II: Difference Equations : Basic definitions ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients .and examples
SAS : PAPER I: DYNAMICS : Motion of a Projectile in a resting medium under gravity. Direct and impact of elastic bodies. ***CALCULUS OF VARIATIONS:*** *Minimum surface of revolution ,Isoperimetric problems examples*

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH JAN 2019.

B.Sc II semester:
NS: PAPERI: Polar coordinates of point and polar curve. Angle between the radius vector and tangent at a point on the curve. Angle of intersection of two curves.
VVK :PAPER II : Equation of spheres ,Section of a sphere by a plane. Equation of sphere through a circle.
R DG:PAPER I : Partial derivatives higher order partial derivatives and examples. convexity of curves.Reduction rormula for integration of $sin^n x, cos^n x$ and examples.
SA:PAPER II Boolean Algebra: Algebraic structures. Principle of duality. and examples. **NUMBER THEORY :** Recap of division algorithm, properties of prime and composite numbers.
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms). D'Alembert's ratio test, Raabe's test, Cauchy's integral test and Root test. and examples.
VVK: PAPER II Fourier series: Fourier series of functions of period 2π and $2l$ and examples.
RDG: PAPER II:Differential Equations III: Linear differential equation of n^{th} order with constant co-officients.and examples. **Group Theory III:Quotient groups** Homomorphism and Isomorphism of groups. Kernel of Homomorphism.
SAS: PAPER I: Vector calculus: PAPER I :The vector differential operator del. The gradient of a scalar point function, The directional derivative of function. and examples.
B.Sc VI semester:
R.G: PAPER I: Total differential equation, Condition of Integrability and its solutions.
V.K: Legendre equation and functions: Legendre's functions- first and second kind, Rodrigue's formula, Orthogonal properties.
N.S: PAPER – II: Complex Integration : Harmonic function, Harmonic conjugate. Construction of analytic function using Milne-Thomson's method.
SAS :PAPER –III : Laplace transforms-: Laplace transforms of some common functions. First shifting theorem, change of scale property.

VVK: **Topology**-: Neighborhood, limit points and derived sets, interior, exterior and boundary points of a set.and examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH FEB 2019.

B.Sc II semester:
NS: PAPERI: Polar and pedal equation of the curves. Polar subtangent and polar sub-normal and examples and examples Derivatives of arc length, Curvatre,Radius of curvature and examples
VVK : PAPER II : Equation of spheres through two given points as ends of a sphere. Equation to a tangent of a sphere, condition for tangency, Radical planes and examples
R DG:PAPER I : Total derivatives and total differential. Homogeneous functions and examples. Points of inflexion of curves. Reduction formula for integration of $tan^n x, cot^n x, sec^n x$ and examples.
SA:PAPER II Boolean Algebra: Distributive and complimented lattices, Boolean lattice and Boolean algebra and examples. **NUMBER THEORY :**Congruences and its properties .Fundamental theorem of arithmetic and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms) and examples.
VVK: PAPER IIFourier series: Fourier series of odd and even functions, half range sine and cosine series. and examples.
RDG: PAPER II:Differential EquationsIII : Particular integral when RHS is of the form e^{ax}, sinax, cosax, x^n, $e^{ax}v$ and xv where v is function of x **Group Theory III:** Homomorphism and Isomorphism of groups. Kernel of Homomorphism. And properties
SAS: PAPER I: Vector calculus: Continuity and differentiability of a vector function. Derivatives of sum. Dot product, Cross product and Triple product of vectors. Constant vector functions, Partial differentiation of vector functions.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Series Solutions of Ordinary Differential Equations: Basic definitions, Power series, ordinary and singular points, Power series solutions of ODEs. Frobenius method. and examples.
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method. and examples
N.S: PAPER – II: Cauchy's Theorem , Morera's Theorem , Cauchy's Integral formula, Cauchy's Integral formula for derivatives, Cauchy's inequality , Lioville's Theorem

SAS :PAPER –III : **Laplace transforms-:** Laplace transforms of periodic functions, Laplace transforms of derivatives and integrals, inverse Laplace transforms

VVK: **Topology-:** Interior, exterior and boundary points of a set.and examples. Base & sub-base examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH MARCH 2019.

B.Sc II semester:
NS: PAPERI:.Radius of curvature in Cartesian ,parametric polar and pedal forms Centre of curvature Evolutes and involutes and examples
VVK : PAPER II : Cones. Equations of a cone, enveloping cone of a sphere, Right circular cone, and examples.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples. Envelops and asymptotes Reduction formula for integration of $cosec^n x, sin^m x. cos^n x, x^n e^{ax}$ and examples.
SA:PAPER II Boolean Algebra: Boolean functions and expressions and examples. **NUMBER THEORY :** Bracket functions ,Euler's functions, Fermat's Euler and Wilson's and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : The P-series(Harmonic), Comparison tests (different forms), D'Alembert's ratio test and examples.
VVK: PAPER II Fourier series: Fourier series of odd and even functions, half range sine and cosine series, and examples.
RDG: PAPER II:Differential EquationsIII :. Homogeneous linear differential equation of n^{th} order and Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Kernel of Homomorphism. And properties
SAS: PAPER I :Vector calculus: The vector differential operator del. The gradient of a scalar point function, The directional derivative of function. Properties of gradient of vector function. Divergence and Curl of a vector point function. Properties of divergence and curl. Solenoidal and Irrotational vectors.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Partial differential equations of 1st order: formation of partial differential equation by eliminating arbitrary constants and functions. Lagrange's linear partial differential equation Pp+Qq = R and its solution, and examples
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method, and examples
N.S: PAPER – II: Taylor's and Laurent's series, zeros and singularities of analytic functions. Calculus of Residues, Residues Theorem, Jordan's lemma and Contour Integration.

SAS :PAPER –III : Laplace transforms-: Heaviside function, Dirac-delta function, unit step function, convolution theorem and Laplace transforms method of solving differential equation of first and second order with constant coefficients

VVK: Topology-: Separation axioms. T_1 & T_2 spaces (properties and examples).

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH APRIL 2019.

B.Sc II semester:
NS: PAPERI: Evolutes and involutes and examples
VVK : PAPER II : Cylinder : Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples, Envelops and asymptotes Reduction formula for integration$x^n e^{ax}$, $x^m (logx)^n$and examples.
SA:PAPER II Boolean Algebra: Boolean expressions and examples. **NUMBER THEORY :** Fermat's ,Euler and Wilson's Theorems, and examples.
B.Sc IV semester:
NS :PAPER I: INFINITE SERIES : D'Alembert's ratio test ,Raabe's test, Cauchy's integral test and Root test and examples.
VVK: PAPER II: Fourier transforms: Finite sine and Cosine transforms. and examples.
RDG: PAPER II Differential EquationsIII :. Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Fundamental theorem of Homomorphism.
SAS: PAPER I: Infinite series III: Absolute convergence and conditional convergence of series. Alternating series, Leibnitz theorem, Uniform convergence.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : .Non-linear differential equations of standard forms I,II,III and IV and examples
VVK: Linear partial differential equations with constant coefficient.
N.S: PAPER – II: Rings and Integral domains: Rings, Properties of rings, sub rings, ideals, principle and maximal ideals in a commutative ring, quotient rings, homomorphism and isomorphism, and integral domains
SAS :PAPER –III : Laplace transforms-: Laplace transforms method of solving differential equation of first and second order with constant coefficients **VVK: Topology-:** T_1 & T_2 spaces (properties and examples).

2018-2019

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH JAN 2018.

B.Sc II semester:
NS: PAPERI: Polar coordinates of point and polar curve. Angle between the radius vector and tangent at a point on the curve. Angle of intersection of two curves.
VVK :PAPER II : Equation of spheres ,Section of a sphere by a plane. Equation of sphere through a circle.
R DG:PAPER I : Partial derivatives higher order partial derivatives and examples. convexity of curves.Reduction formula for integration of $sin^n x, cos^n x$ and examples.
SA:PAPER II Boolean Algebra: Algebraic structures. Principle of duality. and examples. **NUMBER THEORY :** Recap of division algorithm, properties of prime and composite numbers.
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms), D'Alembert's ratio test, Raabe's test, Cauchy's integral test and Root test. and examples.
VVK: PAPER II Fourier series: Fourier series of functions of period 2π and $2l$ and examples.
RDG: PAPER II:Differential Equations III: Linear differential equation of n^{th} order with constant co-efficients.and examples. **Group Theory III:Quotient groups** Homomorphism and Isomorphism of groups. Kernel of Homomorphism.
SAS: PAPER I: Vector calculus: PAPER I :T he vector differential operator del. The gradient of a scalar point function. The directional derivative of function. and examples.
B.Sc VI semester:
R.G: PAPER I: Total differential equation, Condition of Integrability and its solutions.
V.K: Legendre equation and functions: Legendre's functions- first and second kind, Rodrigue's formula, Orthogonal properties.
N.S: PAPER – II: Complex Integration : Harmonic function, Harmonic conjugate. Construction of analytic function using Milne-Thomson's method.
SAS :PAPER –III : Laplace transforms-: Laplace transforms of some common functions. First shifting theorem, change of scale property.

VVK: Topology-: Neighborhood, limit points and derived sets, interior, exterior and boundary points of a set.and examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH FEB 2018.

B.Sc II semester:
NS: PAPERI: Polar and pedal equation of the curves. Polar subtangent and polar sub-normal and examples and examples Derivatives of arc length, Curvatre,Radius of curvature and examples
VVK : PAPER II : Equation of spheres through two given points as ends of a sphere. Equation to a tangent of a sphere, condition for tangency, Radical planes and examples.
R DG:PAPER I : Total derivatives and total differential, Homogeneous functions and examples, Points of inflexion of curves. Reduction formula for integration of $tan^n x, cot^n x, sec^n x$ and examples.
SA:PAPER II Boolean Algebra: Distributive and complimented lattices, Boolean lattice and Boolean algebra and examples. **NUMBER THEORY** :Congruences and its properties ,Fundamental theorem of arithmetic and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms) and examples.
VVK: PAPER IIFourier series: Fourier series of odd and even functions, half range sine and cosine series. and examples.
RDG: PAPER II:Differential EquationsIII :Particular integral when RHS is of the form e^{ax}, sinax, cosax, x^n, $e^{ax}v$ and xv where v is function of x **Group Theory III:** Homomorphism and Isomorphism of groups. Kernel of Homomorphism. And properties
SAS: PAPER I: Vector calculus: Continuity and differentiability of a vector function. Derivatives of sum. Dot product, Cross product and Triple product of vectors. Constant vector functions, Partial differentiation of vector functions.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Series Solutions of Ordinary Differential Equations: Basic definitions, Power series, ordinary and singular points, Power series solutions of ODEs. Frobenius method. and examples.
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method. and examples
N.S: PAPER – II: Cauchy's Theorem , Morera's Theorem , Cauchy's Integral formula, Cauchy's Integral formula for derivatives. Cauchy's inequality , Lioville's Theorem

SAS :PAPER –III : **Laplace transforms-:** Laplace transforms of periodic functions, Laplace transforms of derivatives and integrals, inverse Laplace transforms

VVK: **Topology-:** Interior, exterior and boundary points of a set.and examples. Base & sub-base examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH MARCH 2018.

B.Sc II semester:
NS: PAPERI:.Radius of curvature in Cartesian ,parametric polar and podal forms Centre of curvature Evolutes and involutes and examples
VVK : PAPER II : Cones: Equations of a cone, enveloping cone of a sphere, Right circular cone. and examples.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples, Envelops and asymptotes Reduction formula for integration of $cosec^n x, sin^m x. cos^n x, x^n e^{ax}$ and examples.
SA:PAPER II Boolean Algebra: Boolean functions and expressions and examples. **NUMBER THEORY :** Bracket functions ,Euler's functions, Fermat's Euler and Wilson's and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : The P-series(Harmonic), Comparison tests (different forms), D'Alembert's ratio test and examples.
VVK: PAPER II Fourier series: Fourier series of odd and even functions, half range sine and cosine series. and examples.
RDG: PAPER II:Differential EquationsIII :. Homogeneous linear differential equation of n^{th} order and Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Kernel of Homomorphism. And properties
SAS: PAPER I :Vector calculus: The vector differential operator del. The gradient of a scalar point function. The directional derivative of function. Properties of gradient of vector function. Divergence and Curl of a vector point function. Properties of divergence and curl. Solenoidal and irrotational vectors.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Partial differential equations of 1st order: formation of partial differential equation by eliminating arbitrary constants and functions. Lagrange's linear partial differential equation Pp+Qq = R and its solution. and examples
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method. and examples
N.S: PAPER – II: Taylor's and Laurent's series, zeros and singularities of analytic functions. Calculus of Residues, Residues Theorem, Jordan's lemma and Contour Integration.

SAS :PAPER –III : Laplace transforms-: Heaviside function, Dirac-delta function, unit step function, convolution theorem and Laplace transforms method of solving differential equation of first and second order with constant coefficients

VVK: Topology-: Separation axioms. T_1 & T_2 spaces (properties and examples).

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH APRIL 2018.

B.Sc II semester:
NS: PAPERI: Evolutes and involutes and examples
VVK : PAPER II : Cylinder : Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples, Envelops and asymptotes Reduction formula for integration$x^n e^{ax}$, $x^m(logx)^n$and examples.
SA:PAPER II Boolean Algebra: Boolean expressions and examples. **NUMBER THEORY :** Fermat's ,Euler and Wilson's Theorems, and examples.
B.Sc IV semester:
NS :PAPER I: INFINITE SERIES : D'Alembert's ratio test ,Raabe's test, Cauchy's integral test and Root test. and examples.
VVK: PAPER II: Fourier transforms: Finite sine and Cosine transforms. and examples.
RDG: PAPER II Differential EquationsIII :. Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Fundamental theorem of Homomorphism.
SAS: PAPER I: Infinite series III: Absolute convergence and conditional convergence of series. Alternating series, Leibnitz theorem, Uniform convergence.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Non-linear differential equations of standard forms I,II,III and IV and examples
VVK: Linear partial differential equations with constant coefficient.
N.S: PAPER – II: Rings and Integral domains: Rings, Properties of rings, sub rings, ideals, principle and maximal ideals in a commutative ring, quotient rings, homomorphism and isomorphism, and integral domains
SAS :PAPER –III : Laplace transforms-: Laplace transforms method of solving differential equation of first and second order with constant coefficients *VVK:* ***Topology-:*** T_1 & T_2 spaces (properties and examples).

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JUNE 2018.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Recapitulation of limits and continuity. Algebra of limits (with proofs),properties of continuous functions. and examples.
VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples.
SA:PAPER II :MATRICES: Solution system of Linenr equation and examples. **SET THEORY** : Recapitulation of sets. Equivalence relation and examples.
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. and examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –I : Sequence , limit of sequence. and examples.
VVK:PAPER II:DIFFERENTIAL EQUATION-I: First order first degree equations and examples.
RDG: PAPER II: GROUP THEORY –I: Groups ,Abelian group and examples **Applications of Definite Integrals:** Application of integration for finding the length of arc and examples.
SAS: PAPER I: MATHEMATICAL LOGIC: Recapitulation of basic definitions and examples.
B.Sc V semester:
R.G:PAPER I: Riemann Integration : Partition of an interval. The upper and lower Riemann sums & Riemann integrals. Monotonic functions and bounded functions having finite number of discontinuities. Fundamental theorem of integral calculus.
V.K: PAPER I Beta and Gamma Function: Properties, relation between beta and gamma function theorem.
N.S: PAPER II:NUMERICAL METHOD: Bisection method , Iterations method, Newoton-Raphson method And examples
SAS : PAPER III: DYNAMICS: Kinematics : Velocity and acceleration of a particle along a plane curve. **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JULY 2018.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY: Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. Form examples.
VVK PAPERI: MEAN VALUE THEOREMS: Lagrange's mean value theorem and examples. Cauchy's mean value theorem. Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, ∞/∞ ∞
SAS: PAPER II: MATRICES: Elementary transformations and examples. **SET THEORY:** Partition of a set, Arbitrary unions and intersections. and examples
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. Euclidean algorithm, Reminder Theorem, Factor Theorem, Fundamental Theorem of algebra. and examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –I : Bounded and unbounded sequences and examples,convergent,divergent sequence
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Linear differential equations. Homogeneous and reducible to homogeneous forms examples.
RDG: PAPER II GROUP THEORY –I: Standard examples of groups, properties of group. and examples Application of integration for finiding the length of arc and examples.
SAS:PAPER I:MATHEMATICAL LOGIC : Tautology and contradiction ,logical equivalence,converse examples.
B.Sc V semester:
RDG: PAPER I: Reimann Integration : Necessary and sufficient conditions for integrability.Algebra of integral functions .
VVK: Beta and Gamma Function: Relation between beta and gamma function examples their convergence.Duplication formula.
N.S: PAPER II:NUMERICAL METHOD: Gauss Siedal method, Jacobi iteration method ,and examples.
SAS : PAPER III Radial and Transverse components of velocity and acceleration, tangential and normal components of velocity and acceleration **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation and examples

SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates .

VVK :PAPER III :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF AUG 2018.

B.Sc I semester:

NS: PAPERI: LIMITS AND CONTINUITY : Boundedness of continuous functions Uniform continuity.

VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples MEAN VA LUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And examples

SAS: PAPER II: MATRICES: Rank of Matrices, Reduction to normal forms, Inverse of matrix examples.

R DG:THEORY OF EQUATIONS: Relation between the roots and coefficients of general polynomial equation in one variable. If one of the root of an equation $a_0x^n + a_1x^{n-1} + - - - + a^n$ has one of its rational root is p\q then p is an exact divisior of a_n and q is an exact divisors of a_0. Solution of cubic and bi quadratic examples. **Trigonometry Expansions:** of sine and cosine functions, series of sines and cosines.

SET THEORY : Recapitulation of sets, Equivalence relation and examples. De Morgan's laws and examples

MSP: PAPERI: LIMITS AND CONTINUITY: Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty\times\infty$Indeterminate forms:$0\times\infty$, $-\infty$, 0^0 examples.

B.Sc III semester:

NS : PAPER I :SEQUENCEI : Oscillatory sequences algebra of convergent sequences. Monotonic sequences .Theorems on monotonic sequences. And examples

RDG PAPER II: DIFFERENTIAL EQUATION-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact. And examples. Necessary and sufficient condition for the equation to be exact.

VVK PAPER II GROUP THEORY –I: Semi group, Subgroups and its properties, Permutation of group.

MSP: PAPER I: MATHEMATICAL LOGIC: Logical equivalence ,converse, inverse and contra –positive of an implication examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian forms and examples

SAS: PAPER I :Maclaurian's theorem for two variables .Maxima and minima of two and three variables

B.Sc V semester:

R.G: PAPER – I: Riemann Integration: Integrability of continuous functions monotonic functions. Fundamental theorem of integral calculus, change of variables, Integration by parts
MSP: PAPER I:Beta and Gamma Function: Duplication formula and examples Differential under integral sign, examples.
N.S:PAPERII:NUMERICAL METHOD: $\Delta\ (delta), \nabla(Del), \& \ E(shicft)$ Definitions and their properties nth order difference of a polynomial.Newton Gregory forward and backward difference interpolation formula and examples Lagranges interpolation formula examples
SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates . **VVK :PAPER III** :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF SEPT 2018.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : The nth $(ax+b)^n, \frac{1}{ax+b}, \sin(ax+b),$ $\cos(ax+b), e^{ax} \sin(ax+b)$examples
VVK: PAPER I: Real numbers, Postulates and their consequence Inequalities and absolute values. Examples. Indeterminate forms:$0x\infty, -\infty, 0^0$ examples.
SAS:PAPER II :MATRICES: Solution of system of linear equations. Examples **SET THEORY:** countable and uncountable sets.
R DG:THEORY OF EQUATIONS: Solution of cubic and bi quadratic examples **Trigonometry: Hyperbolic** functions, Logarithm of complex numbers examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –II : Cauchy's sequence,Cauchy's first and second theorems on limits. Examples.
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Solution of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
RDG: PAPER II GROUP THEORY –II: Cyclic groups and its properties ,cosets,Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.
V.K: Beta and Gamma Function: Duplication formula, Double and triple integrals.examples.
N.S:PAPERII:NUMERICAL DIFFERENTION: Forward and backward difference formulae.Computation of first and second ordered derivatives.General Quadrature formula,Trapezoidal rule,Simpsons rules .ordinary linear first order differential equation by Taylor's series Euler's Picard and Runge-kutta method of order two.

SAS :PAPER III:DYNAMICS : Apse and Apsidal distance and Apsidal angle.Motion of a projectile.

VVK :CALCULUS OF VARIATIONS: Geodesic on a plane ,sphere.Brachistochrome problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF OCT 2018.

B.Sc I semester:
VVK :PAPER I: Archimedean property,LUB,and GLB properties examples INDETERMINATES FORM :1^{∞}, ∞^{0} examples
NS: PAPERI: LIMITS AND CONTINUITY : The nth derivative of , $e^{ax}\cos(bx+c)$examples.Leibntz's Rule for nth derivative of a product and examples
SA:PAPER II :MATRICES: Inverse of matrix examples. **SET THEORY** :countable and uncountable examples.
R DG:Summations of trigonometric series.
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences,subsequences and examples
VVK: PAPER II:DIFFERENTIAL EQUATION-II:Solvable for p, Solvable for x, Solvable for y,Clairatu's equations reducible to clairatus form. Examples
RDG: PAPER II:GROUP THEORY –I: Eulers theorem and Fermat's theorem and examples. Surface areas and volume of solids of revoluation for standard curves whose equations are given in parametric forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Existential and universal quantifiers ,method of proof.
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.(Bonnet and Weirstrass form) of integral calculus.
V.K: Beta and Gamma Function: Areas and volumes, Differentiation under integral sign and examples
N.S: PAPER – II:Difference Equations :Basic definations ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients .and examples
SAS :DYNAMICS :Motion of a Projectile in a nn resting medium under gravity.Direct and impact of elastic bodies. **CALCULUS OF VARIATIONS: Minimum surface of revoluation ,Isoperimetric problems examples**

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH DEC 2018.

B.Sc II semester:
NS: PAPERI: Introduction of polar coordinates points.
VVK :PAPER II :Introduction of equation of spheres .
R DG:PAPER I : Introduction of equation of limits and continuity of two variables functions. **Concavity of curves.**
SA:PAPER II Boolean Algebra : Introductionof Lattices
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES :Introduction , Infinite series and examples.
VVK: PAPER II:Fourier series: Introduction of Periodic functions,
RDG: PAPER II Group Theory III: Introduction of Normal sub-groups. **Differential Equation III** :Recap of Differential equation order and degree,linear and nonlinear Differential Equation
SAS: PAPER I: VECTOR CALCULUS: Dot and cross product of vectors
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Simultaneous differential equations with two and three variables.
V.K: Legendre equation and functions: Solutions of Legendre's equations in series.
N.S: PAPER – II: Complex Analysis : Analytic function. Cauchy-Riemann equation.
SAS :PAPER –III : Laplace transforms-: Definition, basic properties. **VVK: Topology-:** Open set, closed set, closure of a set.examples.

2017-2018

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH JAN 2017.

B.Sc II semester:
NS: PAPERI: Polar coordinates of point and polar curve. Angle between the radius vector and tangent at a point on the curve. Angle of intersection of two curves.
VVK :PAPER II : Equation of spheres ,Section of a sphere by a plane. Equation of sphere through a circle.
R DG:PAPER I : Partial derivatives higher order partial derivatives and examples. convexity of curves.Reduction formula for integration of $sin^n x, cos^n x$ and examples.
SA:PAPER II Boolean Algebra: Algebraic structures. Principle of duality. and examples. **NUMBER THEORY :** Recap of division algorithm, properties of prime and composite numbers.
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms). D'Alembert's ratio test, Raabe's test, Cauchy's integral test and Root test. and examples.
VVK: PAPER II Fourier series: Fourier series of functions of period 2π and $2l$ and examples.
RDG: PAPER II:Differential Equations III: Linear differential equation of n^{th} order with constant co-efficients.and examples. **Group Theory III:Quotient groups** Homomorphism and Isomorphism of groups. Kernel of Homomorphism.
SAS: PAPER I: Vector calculus: PAPER I :T he vector differential operator del. The gradient of a scalar point function, The directional derivative of function. and examples.
B.Sc VI semester:
R.G: PAPER I: Total differential equation, Condition of Integrability and its solutions.
V.K: Legendre equation and functions: Legendre's functions- first and second kind, Rodrigue's formula, Orthogonal properties.
N.S: PAPER – II: Complex Integration : Harmonic function. Harmonic conjugate. Construction of analytic function using Milne-Thomson's method.

SAS :PAPER –III : Laplace transforms-: Laplace transforms of some common functions. First shifting theorem, change of scale property.

VVK: Topology-: Neighborhood, limit points and derived sets, interior, exterior and boundary points of a set.and examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH FEB 2017.

B.Sc II semester:
NS: PAPERI: Polar and pedal equation of the curves. Polar subtangent and polar sub-normal and examples and examples Derivatives of arc length, Curvatre,Radius of curvature and examples
VVK : PAPER II : Equation of spheres through two given points as ends of a sphere. Equation to a tangent of a sphere, condition for tangency, Radical planes and examples.
R DG:PAPER I : Total derivatives and total differential. Homogeneous functions and examples. Points of inflexion of curves. Reduction formula for integration of $tan^n x, cot^n x, sec^n x$ and examples.
SA:PAPER II Boolean Algebra: Distributive and complimented lattices, Boolean lattice and Boolean algebra and examples. **NUMBER THEORY** :Congruences and its properties .Fundamental theorem of arithmetic and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : Cauchy's general principle of convergence. Geometric series. The P-series(Harmonic), Comparison tests (different forms) and examples.
VVK: PAPER IIFourier series: Fourier series of odd and even functions, half range sine and cosine series. and examples.
RDG: PAPER II:Differential EquationsIII :Particular integral when RHS is of the form e^{ax}, sinax, cosax, x^n, $e^{ax}v$ and xv where v is function of x **Group Theory III:** Homomorphism and Isomorphism of groups. Kernel of Homomorphism. And properties
SAS: PAPER I: Vector calculus: Continuity and differentiability of a vector function. Derivatives of sum. Dot product, Cross product and Triple product of vectors. Constant vector functions, Partial differentiation of vector functions.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Series Solutions of Ordinary Differential Equations: Basic definitions, Power series, ordinary and singular points, Power series solutions of ODEs. Frobenius method. and examples.
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method. and examples
N.S: PAPER – II: Cauchy's Theorem , Morera's Theorem , Cauchy's Integral formula, Cauchy's Integral formula for derivatives, Cauchy's inequality , Lioville's Theorem

SAS :PAPER –III : Laplace transforms-: Laplace transforms of periodic functions, Laplace transforms of derivatives and integrals, inverse Laplace transforms

VVK: Topology-: Interior, exterior and boundary points of a set.and examples. Base & sub-base examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH MARCH 2017.

B.Sc II semester:
NS: PAPERI:.Radius of curvature in Cartesian ,parametric polar and pedal forms Centre of curvature Evolutes and involutes and examples
VVK : PAPER II : Cones: Equations of a cone, enveloping cone of a sphere, Right circular cone. and examples.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples, Envelops and asymptotes Reduction formula for integration of $cosec^n x, sin^m x. cos^n x, x^n e^{ax}$ and examples.
SA:PAPER II Boolean Algebra: Boolean functions and expressions and examples. **NUMBER THEORY** : Bracket functions ,Euler's functions, Fermat's Euler and Wilson's and examples.
B.Sc IV semester:
NS : PAPER I INFINITE SERIES : The P-series(Harmonic), Comparison tests (different forms), D'Alembert's ratio test and examples.
VVK: PAPER II Fourier series: Fourier series of odd and even functions, half range sine and cosine series, and examples.
RDG: PAPER II:Differential EquationsIII :. Homogeneous linear differential equation of n^{th} order and Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Kernel of Homomorphism And properties
SAS: PAPER I :Vector calculus: The vector differential operator del. The gradient of a scalar point function. The directional derivative of function. Properties of gradient of vector function. Divergence and Curl of a vector point function. Properties of divergence and curl. Solenoidal and irrotational vectors.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Partial differential equations of 1st order: formation of partial differential equation by eliminating arbitrary constants and functions. Lagrange's linear partial differential equation $Pp+Qq = R$ and its solution. and examples
V.K: Legendre equation and functions: Orthogonal properties.Legendre's polynomial, recurrence formulae and examples. **Non-linear partial differential equations:** Charpit's method. and examples
N.S: PAPER – II: Taylor's and Laurent's series, zeros and singularities of analytic functions. Calculus of Residues, Residues Theorem, Jordan's lemma and Contour Integration.

SAS :PAPER –III : Laplace transforms-: Heaviside function, Dirac-delta function, unit step function, convolution theorem and Laplace transforms method of solving differential equation of first and second order with constant coefficients

VVK: Topology-: Separation axioms. T_1 & T_2 spaces (properties and examples).

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH APRIL 2017.

B.Sc II semester:
NS: PAPERI: Evolutes and involutes and examples
VVK : PAPER II : Cylinder : Equation of a cylinder ,enveloping cylinder of sphere,Right circular cylinder.
R DG:PAPER I : Euler's theorem on homogeneous functions and examples, Envelops and asymptotes Reduction formula for integration$x^n e^{ax}$, $x^m(logx)^n$and examples.
SA:PAPER II Boolean Algebra: Boolean expressions and examples. **NUMBER THEORY :** Fermat's ,Euler and Wilson's Theorems, and examples.
B.Sc IV semester:
NS :PAPER I: INFINITE SERIES : D'Alembert's ratio test ,Raabe's test, Cauchy's integral test and Root test. and examples.
VVK: PAPER II: Fourier transforms: Finite sine and Cosine transforms. and examples.
RDG: PAPER II Differential EquationsIII :. Equation reducible to the homogeneous linear form, and examples **Group Theory III:** Fundamental theorem of Homomorphism.
SAS: PAPER I: Infinite series III: Absolute convergence and conditional convergence of series. Alternating series, Leibnitz theorem, Uniform convergence.
B.Sc VI semester:
R.G: PAPER I: Differential Equations : .Non-linear differential equations of standard forms I,II,III and IV and examples
VVK: Linear partial differential equations with constant coefficient.
N.S: PAPER – II: Rings and Integral domains: Rings, Properties of rings, sub rings, ideals, principle and maximal ideals in a commutative ring, quotient rings, homomorphism and isomorphism, and integral domains
SAS :PAPER –III : Laplace transforms-: Laplace transforms method of solving differential equation of first and second order with constant coefficients ***VVK: Topology-:*** *T_1 & T_2 spaces (properties and examples).*

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JUNE 2017.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. and examples.
VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples.
SA:PAPER II :MATRICES: Solution system of Linear equation and examples. **SET THEORY** : Recapitulation of sets, Equivalence relation and examples.
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. and examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –I : Sequence , limit of sequence. and examples.
VVK:PAPER II:DIFFERENTIAL EQUATION-I: First order first degree equations and examples.
RDG: PAPER II: GROUP THEORY –I: Groups ,Abelian group and examples **Applications of Definite Integrals:** Application of integration for finding the length of arc and examples.
SAS: PAPER I: MATHEMATICAL LOGIC: Recapitulation of basic definitions and examples.
B.Sc V semester:
R.G:PAPER I: Riemann Integration : Partition of an interval. The upper and lower Riemann sums & Riemann integrals. Monotonic functions and bounded functions having finite number of discontinuities. Fundamental theorem of integral calculus.
V.K: PAPER I Beta and Gamma Function: Properties, relation between beta and gamma function theorem.
N.S: PAPER II:NUMERICAL METHOD: Bisection method , Iterations method, Newoton-Raphson method And examples
SAS : PAPER III: DYNAMICS: Kinematics : Velocity and acceleration of a particle along a plane curve. **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JULY 2017.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY: Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. Form examples.
VVK PAPERI: MEAN VALUE THEOREMS: Lagrange's mean value theorem and examples. Cauchy's mean value theorem. Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, ∞/∞
SAS: PAPER II: MATRICES: Elementary transformations and examples. **SET THEORY:** Partition of a set, Arbitrary unions and intersections. and examples
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. Euclidean algorithm, Reminder Theorem, Factor Theorem, Fundamental Theorem of algebra. and examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –I : Bounded and unbounded sequences and examples,convergent,divergent sequence
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Linear differential equations. Homogeneous and reducible to homogeneous forms examples.
RDG: PAPER II GROUP THEORY –I: Standard examples of groups, properties of group. and examples Application of integration for finiding the length of arc and examples.
SAS:PAPER I:MATHEMATICAL LOGIC : Tautology and contradiction ,logical equivalence,converse examples.
B.Sc V semester:
RDG: PAPER I: Reimann Integration : Necessary and sufficient conditions for integrability.Algebra of integral functions .
VVK: Beta and Gamma Function: Relation between beta and gamma function examples their convergence.Duplication formula.
N.S: PAPER II:NUMERICAL METHOD: Gauss Siedal method, Jacobi iteration method .and examples.
SAS : PAPER III Radial and Transverse components of velocity and acceleration, tangential and normal components of velocity and acceleration

VVK :**CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation and examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF AUG 2017.

B.Sc I semester:

NS: PAPERI: LIMITS AND CONTINUITY : Boundedness of continuous functions Uniform continuity.

VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem.Lagrange.s Mean Value Theorem. and examples. and examples MEAN VALUE THEOREMS: Taylor's Theorem (with Sciomilch and Rouche's form of reminder), Maclaurin's series. And examples

SAS: PAPER II: MATRICES: Rank of Matrices, Reduction to normal forms, Inverse of matrix examples.

R DG:THEORY OF EQUATIONS: Relation between the roots and coefficients of general polynomial equation in one variable. If one of the root of an equation $a_0x^n + a_1x^{n-1} + - - - + a^n$ has one of its rational root is p\q then p is an exact divisior of a_n and q is an exact divisors of a_0. Solution of cubic and bi quadratic examples. **Trigonometry Expansions:** of sine and cosine functions, series of sines and cosines.

SET THEORY : Recapitulation of sets, Equivalence relation and examples. De Morgan's laws and examples

MSP: PAPERI: LIMITS AND CONTINUITY: Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty x\infty$Indeterminate forms: $0x\infty$, $-\infty$, 0^0 examples.

B.Sc III semester:

NS : PAPER I :SEQUENCEI : Oscillatory sequences, algebra of convergent sequences. Monotonic sequences .Theorems on monotonic sequences. And examples

RDG PAPER II: DIFFERENTIAL EQUATION-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact. And examples. Necessary and sufficient condition for the equation to be exact.

VVK PAPER II GROUP THEORY –I: Semi group, Subgroups and its properties, Permutation of group.

MSP: PAPER I: MATHEMATICAL LOGIC: Logical equivalence ,converse, inverse and contra –positive of an implication examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian forms and examples

SAS: PAPER I :Maclaurian's theorem for two variables .Maxima and minima of two and three variables

B.Sc V semester:

R.G: PAPER – I: Riemann Integration: Integrability of continuous functions monotonic functions. Fundamental theorem of integral calculus, change of variables, Integration by parts
MSP: PAPER I:Beta and Gamma Function: Duplication formula and examples Differential under integral sign, examples.
N.S:PAPERII:NUMERICAL METHOD: $\Delta\ (delta), \nabla(Del), \& \ E(shieft)$ Definitions and their properties nth order difference of a polynomial.Newton Gregory forward and backward difference interpolation formula and examples Lagranges interpolation formula examples
SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates . **VVK :PAPER III** :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF SEPT 2017.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : The nth $(ax+b)^n, \frac{1}{ax+b}, \sin(ax+b),$ $\cos(ax+b), e^{ax} \sin(ax+b)$examples
VVK: PAPER I: Real numbers, Postulates and their consequence Inequalities and absolute values. Examples. Indeterminate forms:$ax\infty, -\infty, 0^0$ examples.
SAS:PAPER II :MATRICES: Soluation of system of linear equations. Examples **SET THEORY:** countable and uncountable sets.
R DG:THEORY OF EQUATIONS: Solution of cubic and bi quadratic examples **Trigonometry: Hyperbolic** functions, Logarithm of complex numbers **examples.**
B.Sc III semester:
NS : PAPER I: SEQUENCE –II : Cauchy's sequence,Cauchy's first and second theorems on limits. Examples.
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Soluation of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
RDG: PAPER II GROUP THEORY –II: Cyclic groups and its properties ,cosets,Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.
V.K: Beta and Gamma Function: Duplication formula, Double and triple integrals.examples.
N.S:PAPERII:NUMERICAL DIFFERENTION: Forward and backward difference formulae.Computation of first and second ordered derivatives,General Quadrature formula,Trapezoidal rule,Simpsons rules .ordinary linear first order differential equation by Taylor's series Euler's Picard *and Runge-kutta method of order two.*

SAS :PAPER III:DYNAMICS : Apse and Apsidal distance and Apsidal angle.Motion of a projectile.

VVK :CALCULUS OF VARIATIONS: Geodesic on a plane ,sphere.Brachistochrome problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF OCT 2017.

B.Sc I semester:
VVK :PAPER I: Archimedean property,LUB,and GLB properties examples INDETERMINATES FORM :1^{∞}, ∞^{0} examples
NS: PAPERI: LIMITS AND CONTINUITY : The nth derivative of ,$e^{ax}\cos(bx+c)$examples.Leibntz's Rule for nth derivative of a product and examples
SA:PAPER II :MATRICES: Inverse of matrix examples. **SET THEORY** :countable and uncountable examples.
R DG:Summations of trigonometric series.
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences,subsequences and examples
VVK: PAPER II:DIFFERENTIAL EQUATION-II:Solvable for p, Solvable for x, Solvable for y,Clairatu's equations reducible to clairatus form. Examples
RDG: PAPER II:GROUP THEORY –I: Eulers theorem and Fermat's theorem and examples. Surface areas and volume of solids of revoluation for standard curves whose equations are given in parametric forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Existential and universal quantifiers ,method of proof.
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.(Bonnet and Weirstrass form) of integral calculus.
V.K: Beta and Gamma Function: Areas and volumes, Differentiation under integral sign and examples
N.S: PAPER – II:Difference Equations :Basic definations ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients .and examples
SAS :DYNAMICS :Motion of a Projectile in a nn resting medium under gravity.Direct and impact of elastic bodies. **CALCULUS OF VARIATIONS: Minimum surface of revoluation ,Isoperimetric problems examples**

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH DEC 2017.

B.Sc II semester:
NS: PAPERI: Introduction of polar coordinates points.
VVK :PAPER II :Introduction of equation of spheres .
R DG:PAPER I : Introduction of equation of limits and continuity of two variables functions. **Concavity of curves.**
SA:PAPER II Boolean Algebra : Introductionof Lattices
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES :Introduction , Infinite series and examples.
VVK: PAPER II:Fourier series: Introduction of Periodic functions,
RDG: PAPER II Group Theory III: Introduction of Normal sub-groups. **Differential Equation III** :Recap ol Differential equation order and degree,linear and nonlinear Differential Equation
SAS: PAPER I: VECTOR CALCULUS: Dot and cross product of vectors
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Simultaneous differential equations with two and three variables.
V.K: Legendre equation and functions: Solutions of Legendre's equations in series.
N.S: PAPER – II: Complex Analysis : Analytic function. Cauchy-Riemann equation.
SAS :PAPER –III : Laplace transforms-: Definition, basic properties. **VVK: Topology-:** Open set, closed set, closure of a set.examples.

2016-2017

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JUNE 2016.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. and examples.
VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem.Lagrange.s Mean Value Theorem. and examples. and examples.
SA:PAPER II :MATRICES: Solution system of Linear equation and examples. **SET THEORY** : Recapitulation of sets, Equivalence relation and examples.
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. and examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –I : Sequence , limit of sequence. and examples.
VVK:PAPER II:DIFFERENTIAL EQUATION-I: First order first degree equations and examples.
RDG: PAPER II: GROUP THEORY –I: Groups ,Abelian group and examples **Applications of Definite Integrals:** Application of integration for finding the length of arc and examples.
SAS: PAPER I: MATHEMATICAL LOGIC: Recapitulation of basic definitions and examples.
B.Sc V semester:
R.G:PAPER I: Riemann Integration : Partition of an interval. The upper and lower Riemann sums & Riemann integrals. Monotonic functions and bounded functions having finite number of discontinuities. Fundamental theorem of integral calculus.
V.K: PAPER I Beta and Gamma Function: Properties, relation between beta and gamma function theorem.
N.S: PAPER II:NUMERICAL METHOD: Bisection method , Iterations method, Newoton-Raphson method And examples
SAS : PAPER III: DYNAMICS: Kinematics :Velocity and acceleration of a particle along a plane curve. **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JULY 2016.

<u>B.Sc I semester</u>:
NS: PAPERI: LIMITS AND CONTINUITY: Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. Form examples.
VVK PAPERI: MEAN VALUE THEOREMS: Lagrange's mean value theorem and examples. Cauchy's mean value theorem. Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty x \infty$
SAS: PAPER II: MATRICES: Elementary transformations and examples. **SET THEORY:** Partition of a set, Arbitrary unions and intersections. and examples
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. Euclidean algorithm. Reminder Theorem, Factor Theorem, Fundamental Theorem of algebra. and examples
<u>B.Sc III semester</u>:
NS : PAPER I :SEQUENCE –I : Bounded and unbounded sequences and examples,convergent,divergent sequence
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Linear differential equations. Homogeneous and reducible to homogeneous forms examples.
RDG: PAPER II GROUP THEORY –I: Standard examples of groups, properties of group. and examples Application of integration for finiding the length of arc and examples.
SAS:PAPER I:MATHEMATICAL LOGIC : Tautology and contradiction ,logical equivalence,converse examples.
<u>B.Sc V semester</u>:
RDG: PAPER I: Reimann Integration : Necessary and sufficient conditions for integrability.Algebra of integral functions .
VVK: Beta and Gamma Function: Relation between beta and gamma function examples their convergence.Duplication formula.
N.S: PAPER II:NUMERICAL METHOD: Gauss Siedal method, Jacobi iteration method .and examples.
SAS : PAPER III Radial and Transverse components of velocity and acceleration, tangential and normal components of velocity and acceleration **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation and examples

SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates .

VVK :PAPER III :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF AUG 2016.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Boundedness of continuous functions Uniform continuity.
VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples MEAN VA LUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And examples
SAS: PAPER II: MATRICES: Rank of Matrices, Reduction to normal forms, Inverse of matrix examples.
R DG:THEORY OF EQUATIONS: Relation between the roots and coefficients of general polynomial equation in one variable. If one of the root of an equation $a_0x^n + a_1x^{n-1} + - - - + a^n$ has one of its rational root is p\q then p is an exact divisior of a_n and q is an exact divisors of a_0. Solution of cubic and bi quadratic examples. **Trigonometry Expansions:** of sine and cosine functions, series of sines and cosines. **SET THEORY** : Recapitulation of sets. Equivalence relation and examples. De Morgan's laws and examples
MSP: PAPERI: LIMITS AND CONTINUITY: Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty x\infty$Indeterminate forms: $0x\infty$, $-\infty$, 0^0 examples.
B.Sc III semester:
NS : PAPER I :SEQUENCEI : Oscillatory sequences. algebra of convergent sequences. Monotonic sequences .Theorems on monotonic sequences. And examples
RDG PAPER II: DIFFERENTIAL EQUATION-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact. And examples. Necessary and sufficient condition for the equation to be exact.
VVK PAPER II GROUP THEORY –I: Semi group, Subgroups and its properties, Permutation of group.
MSP: PAPER I: MATHEMATICAL LOGIC: Logical equivalence ,converse, inverse and contra –positive of an implication examples. Surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian forms and examples
SAS: PAPER I :Maclaurian's theorem for two variables .Maxima and minima of two and three variables
B.Sc V semester:

R.G: PAPER – I: Riemann Integration: Integrability of continuous functions monotonic functions. Fundamental theorem of integral calculus, change of variables, Integration by parts
MSP: PAPER I:Beta and Gamma Function: Duplication formula and examples Differential under integral sign, examples.
N.S:PAPERII:NUMERICAL METHOD: $\Delta\ (delta), \nabla(Del), \& \ E(shief t)$ Definitions and their properties nth order difference of a polynomial.Newton Gregory forward and backward difference interpolation formula and examples Lagranges interpolation formula examples
SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates . **VVK :PAPER III** :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF SEPT 2016.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : The nth $(ax+b)^n, \frac{1}{ax+b}, \sin(ax+b),$ $\cos(ax+b), e^{ax} \sin(ax+b)$examples
VVK: PAPER I: Real numbers, Postulates and their consequence Inequalities and absolute values. Examples. Indeterminate forms:ox∞, $-\infty, 0^0$ examples.
SAS:PAPER II :MATRICES: Solution of system of linear equations. Examples **SET THEORY:** countable and uncountable sets.
R DG:THEORY OF EQUATIONS: Solution of cubic and bi quadratic examples **Trigonometry: Hyperbolic** functions, Logarithm of complex numbers examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –II : Cauchy's sequence,Cauchy's first and second theorems on limits. Examples.
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Solution of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
RDG: PAPER II GROUP THEORY –II: Cyclic groups and its properties .cosets,Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.
V.K: Beta and Gamma Function: Duplication formula, Double and triple integrals.examples.
N.S:PAPERII:NUMERICAL DIFFERENTION: Forward and backward difference formulae.Computation of first and second ordered derivatives.General Quadrature formula,Trapezoidal rule,Simpsons rules .ordinary linear first order differential equation by Taylor's series Euler's Picard and Runge-kutta method of order two.

SAS :PAPER III:DYNAMICS : Apse and Apsidal distance and Apsidal angle.Motion of a projectile.

VVK :CALCULUS OF VARIATIONS: Geodesic on a plane ,sphere.Brachistochrome problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF OCT 2016.

B.Sc I semester:
VVK :PAPER I: Archimedean property,l.UB,and GLB properties examples INDETERMINATES FORM :1^{∞}, ∞^0 examples
NS: PAPERI: LIMITS AND CONTINUITY : The nth derivative of $,e^{ax}\cos(bx+c)$examples.Leibntz's Rule for nth derivative of a product and examples
SA:PAPER II :MATRICES: Inverse of matrix examples. **SET THEORY** :countable and uncountable examples.
R DG:Summations of trigonometric series.
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences,subsequences and examples
VVK: PAPER II:DIFFERENTIAL EQUATION-II:Solvable for p, Solvable for x, Solvable for y,Clairatu's equations reducible to clairatus form. Examples
RDG: PAPER II:GROUP THEORY –I: Eulers theorem and Fermat's theorem and examples. Surface areas and volume of solids of revoluation for standard curves whose equations are given in parametric forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Existential and universal quantifiers ,method of proof.
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.(Bonnet and Weirstrass form) of integral calculus.
V.K: Beta and Gamma Function: Areas and volumes; Differentiation under integral sign and examples
N.S: PAPER – II:Difference Equations :Basic definations ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients .and examples
SAS :DYNAMICS :Motion of a Projectile in a nn resting medium under gravity.Direct and impact of elastic bodies. **CALCULUS OF VARIATIONS: Minimum surface of revoluation ,Isoperimetric problems examples**

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH DEC 2016.

B.Sc II semester:
NS: PAPERI: Introduction of polar coordinates points.
VVK :PAPER II :Introduction of equation of spheres .
R DG:PAPER I : Introduction of equation of limits and continuity of two variables functions. **Concavity of curves.**
SA:PAPER II Boolean Algebra : Introductionof Lattices
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES :Introduction , Infinite series and examples.
VVK: PAPER II:Fourier series: Introduction of Periodic functions,
RDG: PAPER II Group Theory III: Introduction of Normal sub-groups. **Differential Equation III** :Recap of Differential equation order and degree,linear and nonlinear Differential Equation
SAS: PAPER I: VECTOR CALCULUS: Dot and cross product of vectors
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Simultaneous differential equations with two and three variables.
V.K: Legendre equation and functions: Solutions of Legendre's equations in series.
N.S: PAPER – II: Complex Analysis : Analytic function. Cauchy-Riemann equation.
SAS :PAPER –III : Laplace transforms-: Definition, basic properties. **VVK: Topology-:** Open set, closed set, closure of a set.examples.

2015-2016

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JUNE 2015.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : Recapitulation of limits and continuity. Algebra of limits (with proofs).properties of continuous functions. and examples.
VVK: PAPER I: MEAN VALUE THEOREMS: Rolle's Theorem,Lagrange,s Mean Value Theorem. and examples. and examples.
SA:PAPER II :MATRICES: Solution system of Linear equation and examples.
SET THEORY : Recapitulation of sets, Equivalence relation and examples.
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. and examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –I : Sequence , limit of sequence. and examples.
VVK:PAPER II:DIFFERENTIAL EQUATION-I: First order first degree equations and examples.
RDG: PAPER II: GROUP THEORY –I: Groups ,Abelian group and examples **Applications of Definite Integrals:** Application of integration for finding the length of arc and examples.
SAS: PAPER I: MATHEMATICAL LOGIC: Recapitulation of basic definitions and examples.
B.Sc V semester:
R.G:PAPER I: Riemann Integration : Partition of an interval. The upper and lower Riemann sums & Riemann integrals. Monotonic functions and bounded functions having finite number of discontinuities. Fundamental theorem of integral calculus.
V.K: PAPER I Beta and Gamma Function: Properties, relation between beta and gamma function theorem.
N.S: PAPER II:NUMERICAL METHOD: Bisection method , Iterations method, Newoton-Raphson method And examples
SAS : PAPER III: DYNAMICS: Kinematics : Velocity and acceleration of a particle along a plane curve. **VVK :CALCULUS OF VARIATIONS:** Fundamental theorem of calculus of variation Euler's equation

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF JULY 2015.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY: Recapitulation of limits and continuity Algebra of limits (with proofs).properties of continuous functions. Form examples.
VVK PAPERI: MEAN VALUE THEOREMS: Lagrange's mean value theorem and examples. Cauchy's mean value theorem. Indeterminate Forms: L'Hospital's rule (statement only).Indeterminate forms $\frac{0}{0}$, $\infty \times 0$
SAS: PAPER II: MATRICES: Elementary transformations and examples. **SET THEORY:** Partition of a set, Arbitrary unions and intersections. and examples
R DG: PAPER II: THEORY OF EQUATIONS: Polynomial equations of nth degree in one variable. Euclidean algorithm, Reminder Theorem, Factor Theorem, Fundamental Theorem of algebra. and examples
B.Sc III semester:
NS : PAPER I :SEQUENCE –I : Bounded and unbounded sequences and examples,convergent,divergent sequence
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Linear differential equations. Homogeneous and reducible to homogeneous forms examples.
RDG: PAPER II GROUP THEORY –I: Standard examples of groups, properties of group. and examples Application of integration for finiding the length of arc and examples
SAS:PAPER I:MATHEMATICAL LOGIC : Tautology and contradiction ,logical equivalence,converse examples.
B.Sc V semester:
RDG: PAPER I: Reimann Integration : Necessary and sufficient conditions for integrability.Algebra of integral functions .
VVK: Beta and Gamma Function: Relation between beta and gamma function examples their convergence.Duplication formula.
N.S: PAPER II:NUMERICAL METHOD: Gauss Siedal method, Jacobi iteration method .and examples.
SAS : PAPER III Radial and Transverse components of velocity and acceleration, tangential and normal components of velocity and acceleration ***VVK :CALCULUS OF VARIATIONS:*** Fundamental theorem of calculus of variation Euler's equation and examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF AUG 2015.

<u>B.Sc I semester</u>:
NS: PAPERI: LIMITS AND CONTINUITY : Boundedness of continuous functions ,Intermediate value theorem, Borel covering theorem. Uniform continuity.
VVK: PAPER I: MEAN VALUE THEOREMS: Taylor's Theorem (with Sclomilch and Rouche's form of reminder), Maclaurin's series. And examples
SAS: PAPER II: MATRICES: Rank of Matrices, Reduction to normal forms, Inverse of matrix examples. **SET THEORY** : De Morgan's laws and examples
R DG:THEORY OF EQUATIONS: Relation between the roots and coefficients of general polynomial equation in one variable. If one of the root of an equation $a_0x^n + a_1x^{n-1} + \dots + a^n$ has one of its rational root is p\q then p is an exact divisior of a_n and q is an exact divisors of a_0. **Trigonometry :Expansions** of sine and cosine functions, series of sines and cosines.
<u>B.Sc III semester</u>:
NS : PAPER I :SEQUENCEI : Oscillatory sequences. algebra of convergent sequences. Monotonic sequences .Theorems on monotonic sequences. And examples
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact. And examples.Nesessary and sufficient condition for the equation to be exact.
DG: PAPER II GROUP THEORY –I: Semi group, Subgroups and its properties ,Permutation of group. Surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Logical equivalence ,converse, inverse and contra – positive of an implication examples.
<u>B.Sc V semester</u>:
R.G: PAPER – I: Riemann Integration: Integrability of continuous functions monotonic functions. Fundamental theorem of integral calculus, change of variables, Integration by parts
V.K: PAPER I:Beta and Gamma Function: Duplication formula and examples Differential under integral sign, examples.
N.S:PAPERII:NUMERICAL METHOD: $\Delta\ (delta), \nabla(Del), \& E(shieft)$ Definitions and their properties nth order difference of a polynomial.Newton Gregory forward and backward difference

interpolation formula and examples Lagranges interpolation formula examples
SAS : PAPERIII: Central Orbits : Motion of a particle under central force use of polar and pedal coordinates . **VVK :PAPER III** :Fundamental theorem of calculus of variation Euler's equation examples

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF SEPT 2015.

B.Sc I semester:
NS: PAPERI: LIMITS AND CONTINUITY : The nth $(ax+b)^n, \frac{1}{ax+b}, \sin(ax+b),$ $\cos(ax+b), e^{ax} \sin(ax+b)$examples
VVK: PAPER I: Real numbers, Postulates and their consequence Inequalities and absolute values. Examples. Indeterminate forms:$ox\infty, -\infty, 0^0$ examples.
SAS:PAPER II :MATRICES: Soluation of system of linear equations. Examples **SET THEORY:** countable and uncountable sets.
R DG:THEORY OF EQUATIONS: Solution of cubic and bi quadratic examples **Trigonometry: Hyperbolic** functions, Logarithm of complex numbers examples.
B.Sc III semester:
NS : PAPER I: SEQUENCE –II : Cauchy's sequence,Cauchy's first and second theorems on limits. Examples.
VVK: PAPER II: DIFFERENTIAL EQUATION-I: Soluation of differential equation by finding a suitable integrating factor. examples differential equation of the first order higher degree. And examples.
RDG: PAPER II GROUP THEORY –II: Cyclic groups and its properties ,cosets,Lagranges theorem.examples.Surface areas and volume of solids of revolution for standard curves whose equations are given in polar forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Converse, inverse and contra positive of an implications, Mathematical structures, examples
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.
V.K: Beta and Gamma Function: Duplication formula, Double and triple integrals.examples.
N.S:PAPERII:NUMERICAL DIFFERENTION: Forward and backward difference formulae.Computation of first and second ordered derivatives.General Quadrature formula,Trapezoidal rule,Simpsons rules ,ordinary linear first order differential equation by Taylor's series Euler's Picard and Runge-kutta method of order two.

SAS :PAPER III:DYNAMICS : Apse and Apsidal distance and Apsidal angle.Motion of a projectile.

VVK :CALCULUS OF VARIATIONS: Geodesic on a plane ,sphere.Brachistochrone problem examples.

DEPARTMENT OF MATHEMATICS

G. S. S. COLLEGE, BELGAUM.

TEACHING PLAN FOR THE MONTH OF OCT 2015.

B.Sc I semester:
VVK :PAPER I: Archimedean property,LUB,and GLB properties examples INDETERMINATES FORM $:1^{\infty}, \infty^{0}$ examples
NS: PAPERI: LIMITS AND CONTINUITY : The nth derivative of $,e^{ax}\cos(bx+c)$examples.Leibntz's Rule for nth derivative of a product and examples
SA:PAPER II :MATRICES: Inverse of matrix examples. **SET THEORY** :countable and uncountable examples.
R DG:Summations of trigonometric series.
B.Sc III semester:
NS : PAPER I :SEQUENCE –II : Cauchy's criterion for convergence of sequences.subsequences and examples
VVK: PAPER II:DIFFERENTIAL EQUATION-II:Solvable for p, Solvable for x, Solvable for y,Clairatu's equations reducible to clairatus form. Examples
RDG: PAPER II:GROUP THEORY –I: Eulers theorem and Fermat's theorem and examples. Surface areas and volume of solids of revoluation for standard curves whose equations are given in parametric forms and examples
SAS: PAPER I :MATHEMATICAL LOGIC : Existential and universal quantifiers ,method of proof.
B.Sc V semester:
R.G: PAPER – I: Reimann Integration : Integration by parts examples.The first and second examples.(Bonnet and Weirstrass form) of integral calculus
V.K: Beta and Gamma Function: Areas and volumes, Differentiation under integral sign and examples
N.S: PAPER – II:Difference Equations :Basic definations ,order and degree ,soluation,formation of first and second linear difference equations with constant coefficients ,and examples
SAS :DYNAMICS :Motion of a Projectile in a nn resting medium under gravity.Direct and impact of elastic bodies. **CALCULUS OF VARIATIONS: Minimum surface of revoluation ,Isoperimetric problems examples**

R DG:PAPER I : Introduction of equation of limits and continuity of two variables.
Concavity of curves.
SA:PAPER II Boolean Algebra : Introductionof Lattices
B.Sc IV semester:
NS : PAPER I :INFINITE SERIES :Introduction , Infinite series and examples.
VVK: PAPER II:Fourier series: Introduction of Periodic functions,
RDG: PAPER II Group Theory III: Introduction of Normal sub-groups.
Differential Equation III :Recap of Differential equation order and degree,linear and nonlinear Differential Equation
SAS: PAPER I: VECTOR CALCULUS:Dot and cross product of vectors
B.Sc VI semester:
R.G: PAPER I: Differential Equations : Simultaneous differential equations with two and three variables.
V.K: Legendre equation and functions: Solutions of Legendre's equations in series.
N.S: PAPER – II: Complex Analysis : Analytic function. Cauchy-Riemann equation.
SAS :PAPER –III : Laplace transforms-:Definition, basic properties.
VVK: Topology-: Open set, closed set, closure of a set.examples.

Principal
B. S. Sc. College, Belagavi

IQAC Co-ordinator
BSS College, Belagavi