Govt. Naveen College Salhewara, Rajnandgaon, (C.G.)

Teaching Plan

संशोधित पाठ्यक्रम

बी.ए. / बी.एस–सी. / बी.कॉम.

भाग – एक (आधार पाठ्यक्रम)

प्रश्न पत्र – प्रथम (हिन्दी भाषा)

(पेपर कोड –0101)

Lecture No.	Topic to be Covered	Remark
16 Day	इकाई–1 (क.) पल्लवन, पत्राचार, अनुवाद, पारिभाषिक शब्दावली एवं हिंदी में पदनाम (ख.) ईदगाह (कहानी) – मुंषी प्रेमचंद।	
16 Day	इकाई–2 (क.) षब्द षुद्धि, वाक्य षुद्धि, षब्द ज्ञान–पर्यायवाची षब्द, विलोम षब्द, अनेकार्थी षब्द, समश्रुत षब्द, अनेक शब्दों के लिए एक षब्द एवं मुहावरे–लोकोक्तियाँ (ख.) भारत वंदना (कविता)– सूर्यकान्त त्रिपाठी निराला।	
16 Day	इकाई–3 (क.) देवनागरी लिपि – नामकरण, स्वरूप एवं देवनागरी लिपि की विषेषताएँ,हिंदी अपठित गद्यांश, संक्षेपण, हिंदी में संक्षिप्तीकरण। (ख.) भोलाराम का जीव (व्यंग्य) – हरिशंकर परसाई।	
14 Day	इकाई–4 (क.) कम्प्यूटर का परिचय एवं कम्प्यूटर में हिंदी का अनुप्रयोग। (ख.) शिकागो से स्वामी विवेकानंद का पत्र।	
14 Day	इकाई–5 (क.) मानक हिन्दी भाषा का अर्थ, स्वरूप, विशेषताएँ, मानक, उपमानक, अमानक भाषा। (ख.) सामाजिक गतिशीलता – प्राचीन काल, मध्यकाल, आधुनिक काल।	

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Teaching Plan

FOUNDATION COURSE

B.A./B.Sc./B. Com – I (PAPER – II)

ENGLISH LANGUAGE (Paper Code-0102)

Lecture No.	Topic to be Covered	Remark
20 Day	UNIT-1 **Basic Language skills : Grammar and Usage.** Grammar and Vocabulary based on the prescribed text. To be assessed by objective / multiple choice tests.	
20 Day	**Unit 2. Comprehension of an unseen passage.** This should simply not only (a) An understanding of the passage in question, but also (b) A grasp of general language skills and issues with reference to words and usage With the passage and. (c) The Power of short independent composition based on themes and issues raised in the passage. To be assessed by both objective multiple choice and short answer type tests.	
10 Day	**Unit 3 Composition** : Paragraph writing	
10 Day	**Unit 4.Letter writing** (The formal and one Informal) Two letters to be attempted of 5 marks each. One formal and one informal.	
20 Day	**Unit 5. Texts :** Short prose pieces (Fiction and not fiction) short poems, the pieces should cover a range of authors, subjects and contexts. With poetry if may sometimes be advisable to include pieces from earlier periods, which are often simpler than modern examples. In all cases, the language should be accessible (with a minimum of explanation and reference to standard dictionaries) to the general body of students schooled in the medium of an Indian language. Students should be able to grasp the contents of each place; explain specific words, phrases and allusions; and comment on general points of narrative or argument. Formal Principles of Literary criticism should not be taken up at this stage. To be assessed by five short answers of three marks each.	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - Physics

Paper – I (Mechanics, Oscillations and Properties of Matter)

Lecture No.	Topic to be Covered	Remark
20 day	**Unit 1.** Cartesian, Cylindrical and Soherical coordinate system,Inertial and non inertial frames of reference, uniformly rotating frame, Carioles force and its applications. Motion under a central force, Kepler's laws. Effect of Centrifugal and Carioles forces due to earth's rotation, center of mass (C.M.) Lab amd C.M. frame of reference, motion of C.M. of system of particles subject to Extemals forces elastic, and inelastic collision in one and two dimensions, scattering angle in the laboratory frame of reference, conservation of linear and angular momentum conservation of energy.	
15 day	**Unit 2.** Rigid body motion, rotational motion moments of inetia and their products, principal moments & axes, introductory idea Eulers equations. Potential well and periodic Oscillations, Case of harmonic small oscillations differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations. Spring and mass system, simple and compound pendulum, torsional pendulum.	
17 Day	**Unit3.** Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the some frequency, lissajous figures, damped harmonic oscillator, case of different frequencies power dissipation, quality factor, examples driven (forced) harmonic oscillator, transirnt and steady states power absorption, resonance.	
16 day	**Unit 4.** E as an accelerating fild, electron gun, case of discharge tube, Linear accelerator, E as deflecting fild- CRO sensitivity, Transverse b fild, 180 deflection mass spectrograph curvatures of traks for energy determination, principle of a cyclotron. Mutually perpendicular E and B filds: velocity selectror its r-Esolution. Parallel E nad B filds, positive ray parabolas, dise-Overy of isotopes, elements of mass spectrography, principle Of magnetic focusing lens.	
18 Day	**Unit 5.** Elasticity: Strain and stress, elastic, Hookes law, Modulus of rigidity, poisons ratio, Bulk modulus, relation connecting different elastic- constants, twisting couple of a cylinder (solid and hallow), Bending moment, Cantilever, Young modules by bending of beam . Viscosity: Poiseulles equation of liquid through a narrow tube, equations of continuity. Eulers equation, Bernoullis theorem, viscous fluids, streamline and turbulent flow. Poiseulles law, Coefficient of viscosity, Stokes law Surface tension and molecular interpretation of surface tension, Surface energy, Angle of contact wetting.	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - Physics

Paper – II (Electricity, Magnetism and Electromagnetic Theory)

Lecture No.	Topic to be Covered	Remark
15 Day	**Unit 1.** Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar fild and its geometrical interpretation, divergence and curl of a vector fild and their geometrical interpretation, line surface and volume integrals, flux of a vector fild gauss divergence theorem, Greens theorem and Stokes theorem, and their physical significance. Kirchoffs law, Ideal Constant voltage and Constant Sources. Thevenin theorem, Norton theorem, Superposition theorem, Reciprocity theorem and maximum Power Transfer theorem.	
17 Day	**Unit 2.** Coulombs law in vacuum expressed in Vector forms, calculations of E for simple distributions of charges at rest, dipole and quadrupole filds. Work done on a charge in a electrostatic fild expressed as a line integral, conservation nature of the electrostatic fild Relatio between Electric potential and electric fild torque on a dipole in a uniform electric fild and its energy flux of the electric fild gauss law and its application E due to (1) an Infinite Line of charge (2) a Charged Cylindtrical Conductor (3) an infinite sheet of Charge and Two Parallel Charge Sheets capacitors, electrostatic fild energy, force per unit area of the surface of a conductor in an electric fild, conducting sphere in a uniform electric fild.	
18 Day	**Unit 3.** Dielectric constant, Polar and Non Polar dielectrics and Gauss law Dielectric Polarization, Electric Polarization vector P, Electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity, Polarizability and mechanism of Polarization, Lorentz local fild, Clausius Mossotri equation, Debye equation, ferroelectric and Paraelectric dielectric, Steady current density J, non steady currents and continuity equation, rise and decay of current in LR, LCR circuits, decay constants, AC circuits, complex number and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor power consumed by an a AC circuit, power factor.	
16 Day	**Unit 4.** Magnetization Current and magnetization vector M, three magnetic vectors and their relationship Magnetic permeability and susceptibility, Diamagnetic, paramagnetic and ferromagnetic substances. B.H. curve, cycle of magnetization and hysteesis, Hysteresis loss. Biot-savarts law and its applications: B due to (1) a Straight Current Carrying Conductor and (2) Current Loop Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole) Amperes	

	Circuital law (Integral and Differential Forms).	
17 Day	**Unit 5.** Electromagnetic induction, Faradays law, electromotive force, integral and differential forms of Faradays law Mutual and self inductance, Transformers, energy in a static magnetic fild, maxwells displacement current, maxwells equations, electromagnetic fild energy density The wave equation satisfied by E and B, plane electromagnetic waves in vacuum, Poyntings vector.	

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Teaching Plan

Class: - B.Sc. I

Subject: - Chemistry

Paper – I (Inorganic Chemistry)

Lecture No.	Topic to be Covered	Remark
6 Day **5 Day**	**Unit 1. A. Atomic Structure:** Bohr's theory its limitation and atomic spectrum of hydrogen atom. General idea of de-Broglie matter-waves, Heisenberg uncertainty principle, Schrodinger wave equation, significance Ψ and Ψ 2, radial and angular wave function and probability distribution curves, quantum numbers, Atomic orbital and shapes of s, p, d-orbitals, Aufbau and Pauli exclusion principles. Hund's Multiplicity rule, electronic configuration of the elements. **B. Periodic Properties:** Detailed discussion of the following periodic properties of the elements, with reference to s and p-block. Trends in periodic table and application in predicting and explaining the chemical behavior. (a) Atomic and ionic radii, (b) Ionization enthalpy, (c) Electron Gain enthalpy, (d) Electronegativity, Pauling's Mulliken's Allred Rochow's scales. (e) Effective nuclear charge in periodic table.	
10 Day	**Unit 2. Chemical Bonding-I: Ionic bond:** Ionic Solids – Ionic structures, radius ratio and co-ordination number, Limitation of radius ratio rule, lattice defects, semiconductors, lattice energy, Born-Haber cycle. Solvation energy and solubility of ionic solids, polarizing power and polarisability of ion, Fajans rule. Ionic Character in covalent compounds: Bond moment and dipole moment. Percentage ionic character from dipole moment and Electronegativity difference. Metallic bond-free electron. Valence bond and band theories.	
10 Day	**Unit 3. Chemical Bonding-II: Covalent bond:** Lewis structure. Valence bond theory and its Limitation. Concept of hybridization. Energetics of hybridization, equivalent and non-equivalent hybrid orbitals. Valence shell electron pair repulsion theory (VSEPR) shapes of the following simple molecules and ions containing lone pairs and bond pair of electrons: H_2O, NH_3, PCl_3, PCl_5, SF_6, H_3O^+, SF_4, and ICl_2. Molecular orbital theory. Bond order and bond strength. Molecular orbital diagrams of diatomic and simple polyatomic molecules N_2, O_2, CO, NO.	
6 Day 8 Day	**Unit 4. A. s-Block Elements:** General concepts on group relationships and gradation properties, Comparative study, salient feature of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alkyl and aryls. Derivatives of alkali and alkaline earth metals. **B. p-Block Elements:** General concepts on group relationships and gradation properties. Halides, hydrides, oxides and oxy-acids of Boron. Aluminium, Nitrogen and phosphorus. Boranes, borazines, fullerenes, grapheme and silicates, inter-halogens and pseudo-halogens.	

3 Day 12 Day	**Unit 5. A. Chemistry of Noble Gases:** Chemical properties of the noble gases, chemistry of xenon, structure, bonding in xenon compounds. **B. Theoretical Principles in Qualitative Analysis (H2S) Scheme):** Basic principles involved in the analysis of cations and anions and solubility products, common ion effect. Principals involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after group II.	

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Teaching Plan

Class: - B.Sc. I

Subject: - Chemistry

Paper – II (Organic Chemistry)

Lecture No.	Topic to be Covered	Remark
13 Day	Unit 1. **Basic of organic chemistry:** Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, Electromeric, Resonance and mesomeric effects, hyper conjugation and their application, Dipole moment. Electrophiles and Nucleophiles, Nucleophilicity and basicity, Homolytic and Heterolytic cleavage. Generation, shape and relative stability of Carbocations, Carbanions, Free Radicals, Carbenes and Nitrenes. Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.	
12 Day	Unit 2. **Introduction to Stereochemistry:** Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more Chiral-centers, Diastereoisomers, meso compound, Relative and absolute configuration: Fischer, Newman and Sawhorse Projection formulae and their inter-conversions, Erythrose and threose. D/L, d/l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P. rules), R/S nomenclature. Geometrical isomerism: cis-trans, syn-anti and E/Z notation.	
11 Day	Unit 3. **Conformational Analysis of Alkanes:** Conformational Analysis of alkanes, ethane, butane, cyclohexane and sugars. Relative Stability and Energy diagrams. Types of cycloalkanes and their relative stability. Baeyer strain theory: Theory of strainless rings, Chair, Boat and Twist Boat Conformation of cyclohexane with energy diagrams, Relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.	
12 Day	Unit 4. **Chemistry of Aliphatic Hydrocarbon:** **A. Carbon-Carbon sigma (σ) bonds:** Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reaction, Free radical substitutions: Halogenation-relative reactivity and selectivity. **B.Carbon-Carbon Pi (л) bonds:** Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations. Reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff/Anti -Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation). 1,2-and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene. Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.	

12 Day	**Unit 5. Aromatic Hydrocarbons** Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.	

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Teaching Plan

Class: - B.Sc. I

Subject: - Chemistry

Paper – III (Physical Chemistry)

Lecture No.	Topic to be Covered	Remark
10 Day	Unit-1. **Mathematical Concepts for Chemist:** Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications.	
10 Day	Unit-2. **Gaseous State Chemistry:** Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thomson effect, Liquification of Gases. Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behaviour. Van-der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.	
6 Day 6 Day	Unit-3. **A. Liquid State Chemistry:** Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension. **B. Colloids and Surface Chemistry:** Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotrophy, Application of colloids. Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET.	
11 Day	Unit-4. **Solid State Chemistry:** Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.	

8 Day	**Unit-5. A. Chemical Kinetics:** Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non mathematical concept of transition state theory.	
5 Day	**B. Catalysis:** Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristic of catalyst, Enzyme catatysed reactions, Micellar catatysed reactions, Industrial applications of Catalysis.	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - MATHEMATICS

Paper – I (ALGEBRA AND TRIGONOMETRY)

No.	Topic to be Covered	Remark
10 Day	**Unit 1.** Elementary operations on matrices, Inverse of a matrix. Linear independence of row and column matrices, Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, eigenvectors and the characteristic equations of a matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.	
10 Day	**Unit 2.** Application of matrices to a system of linear (both homogeneous and nonhomogeneous) equations. Theorems on consistency of a system of linear equations. Relation between the roots and coefficients of general polynomial equations in one variable. Transformation of equations. Descarte's rule of signs. Solutions of cubic equations (Cardons method), Biquadratic equation.	
12 Day	**Unit 3.** Mappings, Equivalence relations and partitions. Congruence modulo n. Definition of a group with examples and simple properties. Subgroups, generation of groups, cyclic groups, coset decomposition, Lagrange 's theorem and its consequences. Fermat's and Euler's theorems. Normal subgroups. Quo tient group, Permutation groups. Even and odd permutations. The alternating groups An. Cayley's theorem.	
11 Day	**Unit 4.** Homomorphism and Isomorphism of groups. The fundamental theorems of homomorphism. Introduction, properties and examples of rings, Subrings, Integral domain and fields Characteristic of a ring and Field.	
12 Day	**Unit 5.** De-Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of trigonometrical functions. Gregory's series. Summation of series.	

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Class: - B.Sc. Part- I

Subject: - MATHEMATICS

Paper – II (CALCULUS)

No.	Topic to be Covered	Remark
11 Day	**Unit 1.** $\varepsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of discontinuties. Differentiability. Successive differentiation. Leibnitz theorem. Maclaurin and Taylor series expansions.	
10 Day	**Unit 2.** Asymptotes. Curvature. Tests for concavity and convexity. Points of inflexion. Multiple points. Tracing of curves in cartesian and polar coordinates.	
10 Day	**Unit 3.** Integration of transcendental functions. Reduction formulae. Definite integrals. Quadrature. Rectification. Volumes and surfaces of solids of revolution.	
12 Day	**Unit 4.** Degree and order of a differential equation. Equations reducible to the linear form. Exact differential equations. First order higher degree equations solvable for x, y, p. Clairaut's form and singular solutions. Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.	
12 Day	**Unit 5.** Linear differential equations of second order. Transformation of the equation by changing the dependent variable/the independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - MATHEMATICS

Paper – III (VECTOR ANALYSIS AND GEOMETRY)

No.	Topic to be Covered	Remark
11 Day	**Unit-1** Scalar and vector product of three vectors. Product of four vectors. Reciprocal Vectors. Vector differentiation. Gradient, divergence and curl.	
10 Day	**Unit-2.** Vector integration. Theorems of Gauss, Green, Stokes and problems based on these.	
10 Day	**Unit-3.** General equation of second degree. Tracing of coni cs. System of conics. Confocal conics. Polar equation of a conic.	
10 Day	**Unit-4.** Sphere. Cone. Cylinder	
12 Day	**Unit-5.** Central Conicoids. Paraboloids. Plane sections of conicoids. Genera ting lines. Confocal Conicoids. Reduction of second degree equations..	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - Botany

Paper – I (Bacteria, Viruses,Fungi,Lichens and Algae)

No.	Topic to be Covered	Remark
12 Day	**Unit 1. VIRUSES:** General characteristics, types of viruses based on Structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prons, and Cyanophages Mycorrhiza Type and Signification.	
15 Day	**Unit 2. BACTERIA:** General charatcetistics and classification (on the Basis of morphology), fine structure of bacterial cell Gram positive and Gram Negative Bacteria, mode of nutrition and reproduction vegetative, asexul and recombination (conjugation, transformation and transduction Economic importance Microbial Biotechnology, Rhizobium,Azatobactor, Anabena.	
15 Day	**Unit 3. FUNGI:** General account of habit and habitat,structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heretrothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi life cycle of saprolegnia, Albugo, Aspergillus Peziza, Agaricus, Ustilago,Puccinia, Alternaria and cercospora. VAM Fungi	
15 Day	**Unit 4. ALGAE:** Algae General characters, range of thallus Organization, Gaidukov phenomenon, reproduction life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : Nostor, Gloeocaspsa, Volvox, Oedogonium, Vaucheria, Chara, Ectocarpus Polysiphonia.	
16 Day	**Unit 5.** Lichens – General account, type structure, nutrition reproduction and economic importance. Mycoplama: Structure and importance Blue Green Algae (BGA) in nitrogen economy of soil and relamation of Ushar land. mushroom Biotechnology.	

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - Zoology

Paper – I (Cell Biology and Non-chordata)

No.	Topic to be Covered	Remark
15 Day	**Unit 1** 1. The cell (Prokaryotic and Eukaryotic) 2. Organization of Cell: Extra-nuclear and nuclear Plasma membrane, Mitochondria, Endoplasmic reticulum, Golgi body, Ribosome and Lysosome). 3. Nucleus, Chromosomes, DNA and RNA	
15 Day	**Unit 2.** 1. Cell division (Mitosis and Meiosis), 2. An elementary idea of Cancer cells And Cell transformation. 3. An elementary idea of Immunity: Innate & Acquired Immunity, Lymphoid organs, Cells of Immune System, Antigen, antibody and their interactions	
15 Day	**Unit 3.** 1.General characters and classification of Phylum Protozoa, Porifera, and Coelenterata up to order. 2. Protozoa: Type study - Paramecium, 3. Porifera: Type study - Sycon. 4. Coelenterata: Type study - Obelia	
17 Day	**Unit 4.** 1.General characters and classification of Phylum Platyhelminthes, Nemathelminthes, Annelida and Arthropoda up to order. 2. Platyhelminthes and Nemathelminthes: Type Study – Fasciola, Ascaris 3. Annelida: Type Study - Pheretima. 4. Arthropoda: Type Study - Palaemone.	
17 Day	**Unit 5.** 1. General characters and classification of Phylum Mollusca and Echinodermata up to order. 2. Mollusca: Type Study - Pila. 3. Echinodermata- Type Study- Asterias (Starfish)	

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राजनांदगांव (छ.ग.)

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Teaching Plan

Class: - B.Sc. Part- I

Subject: - Zoology

Paper – II (Chordata and Embryology)

No.	Topic to be Covered	Remark
15 Day	**Unit 1.** 1. Classification of Hemichordata 2. Hemichordata- Type study-Balanoglossus 3. Classification of Chordates upto orders. 4. Protochordata-Type study - Amphioxus. 5. A comparative account of Petromyzon and Myxine.	
15 Day	**Unit 2.** 1. Fishes-Skin & Scales, migration in fishes, Parental care in fish. 2. Amphibia-Parental care and Neoteny. 3. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles	
12 Day	**Unit 3.** 1. Birds- Flight Adaptation, Migration, and Perching mechanism, Discuss-Birds are glorified reptiles. 2. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities. 3. Aquatic Mammals and their adaptations.	
17 Day	**Unit 4.** 1. Fertilization 2. Gametogenesis, Structure of gamete and Typesof eggs 3. Cleavage 4. Development of Frog up to formation of three germ layers. 5. Parthenogenesis	
15 Day	**Unit 5.** 1. Embryonic induction, Differentiation and Regeneration. 2. Development of Chick (a) up to formation of three germ layers, (2) Extra-embryonic membranes. 3. Placenta in mammals.	

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Teaching Plan

Class: - B. A. Part- I (Political Science)

Paper - I

Subject: - Political Theory

No.	Topic to be Covered	Remark
16 Day	**Unit-1.** Meaning and Definition of Political Science (with modern concept). Politics as a specific human behaviour. Power, Authority and Influence: meaning, features and kinds. Method of Study to Political Science: Traditional , Behaviouralism and Post Behaviouralism.	
12 Day	**Unit-2.** State and its essential elements. Various theories of the origin of the State, Marxist theory . Organismic Theory.	
18 Day	**Unit-3.** Sovereignty and its pluralistic criticism. Rights: meaning, kinds and theories. Duties. Liberty: meaning, kinds, safeguards. Equality: meaning, kinds and relations with Liberty. Democracy: meaning, comprehensive meaning, challanges, conditions for its success, merits and demerits. Direct Democracy..	
18 Day	**Unit-4.** Kinds of Government: Unitary and Federal, Parliamentary and Presidential. Dictatorship. Organs of Government: Executive, Legislature and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitution: meaning and kinds. Theories of representation and Electoral Process.	
17 Day	**Unit-5.** Public Welfare State. Party System: meaning, kinds , process. Pressure Groups: meaning, kinds and technique. Social Change: meaning, characteristics, theories. Feminis. Nationalism.	

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Teaching Plan

Class: - B. A. Part- I (Political Science)

Paper - II

Subject: - Indian Government and Politics

No.	Topic to be Covered	Remark
15 Day	**Unit-1.** Indian National Movement: First Independence Movement 1858, Non co-operation Movement, Civil Disobedience Movement and Quit India Movement. Constitutional Development of India: Govt. of India Act of 1858, 1909, 1919 and 1935.	
15 Day	**Unit-2.** Constitution of India: Characteristics, Preamble, Sources. Federal System. Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process.	
16 Day	**Unit-3.** Union Executive: President, Vice President, Council of MInisters and Prime MInister. Union Legislature: Parliament: Lok Sabha and Rajya Sabha. Parliamentary Procedure.	
15 Day	**Unit-4.** Union Judiciary: Supreme Court: Organisation, Jurisdiction, Judicial Review, Judicial Activism. State Executive: Governor, Council of Ministers and Chief Minister.	
18 Day	**Unit-5.** State Legislature: Legislative Assembly and Legislative Council. Election Commission and Election Reforms. National and Regional Parties. Major issues of Indian Politics: Caste, Religion, Language and Region. Panchayati Raj System.	

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Teaching Plan

Class: - B. A. Part- I (Sociology)

Paper - I

Subject: - Introduction to Sociology

No.	Topic to be Covered	Remark
17 Day	Unit-1 **Sociology:-** Meaning, Nature, scope, Subject, matter and signification. **Basic Concept:-** Society, Community, institution, Association, group, Status and role.	
18 Day	Unit-2. **Social Institutions:-** Marriage, Family and kinship. **Culture and society:-** Culture, Socialization, The individual and society, social control, norms and values.	
15 Day	Unit-3. **Social Stratification:-** Meaning, forms and theories. **Social Mobility:-** Meaning, forms and theories.	
16 Day	Unit-4. **Social change:-** Meaning and patterns, types, factors, evolution and progress.	
17 Day	Unit-5. **Social system and process:-** Social system – Meaning, characteristics and element, Social process – meaning, element, characteristics and types.	

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Teaching Plan

Class: - B. A. Part- I (Sociology)

Paper - II

Subject: - Contemporary Indian Society

No.	Topic to be Covered	Remark
15 Day	Unit-1. **Classical View about Indian Society:-** Verna, Asharam, karma, Dharma and Purusharth.	
17 Day	Unit-2. **The Structure and composition of Indian society :-** **Structure;** Village, Towns, Cities and Rural – Urban Linkage, **Compositions:-** Tribes, Davits, Women and Minorities.	
17 Day	Unit-3. **Basic Institution of Indian Society:-** Caste system, Joint Family, Marriage and Changing dimension.	
15 Day	Unit-4. **Familial Problems:-** Dowry, Domestic violence, Divorce, Intra – intergenerational conflict, problem, of elderly	
15 Day	Unit-5. **Social Problems:-** Surrogate Motherhood, Live in Relationship, Regionalism, Communalism, Corruption, Youth unrest.	

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Teaching Plan

Class: - B. A. Part- I (Economics)

Paper - I

Subject: - Micro Economics

No.	Topic to be Covered	Remark
15 Day	**Unit 1** Introduction - Definitions Nature and scope of Economics, Methodology in Economics, Utility - Cardinal and Ordinal approaches, Indifference curve, Consumer's equilibrium, Giffin goods, Demand - Law of Demand, Elasticity of demand Consumer's surplus	
17 Day	**Unit 2.** Theory of production and cost, Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale, Different concepts of cost and their interrelation, Equilibrium of the firm.	
15 Day	**Unit 3** Market structure-perfect and imperfect markets, Equilibrium of a firm-Perfect competition, Monopoly and price discrimination, Monopolistic competition, Duopoly, Oligopoly, controlled and administered prices	
18 Day	**Unit 4.** Factor pricing-Marginal productivity theory of distribution, Euler's theorem, Theories of wage determination, wages and collective bargaining, wage differentials, Rent - Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory, Interest Classical and Keynesian Theories, Modern Theory, Profits - Innovation, Risk bearing and uncertainty theories	
18 Day	**Unit 5.** Welfare economics: , What welfare economics is about ?, Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics, Concept and condition of Pareto optimality, New welfare economics: Kaldor-Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice: Bergson- Samuelson social welfare function, Prof. Amartya Sen's critique, Arrow impossibility theorem.	

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Teaching Plan

Class: - B. A. Part- I (Economics)

Paper - II

Subject: - Indian Economy

No.	Topic to be Covered	Remark
18 Day	**Unit 1.** Pre and post independent Indian economy: A short introduction of economic policies of British India, State of economy at the time of independence, Planning exercise in India-Planning in India through different five Year Plans, The planning commission and NITI Aayog, Growth and development in pre-reform period, New Economic Reforms: Liberalization, Privatization and Globalization, Growth, development and structural change in post-reform period..	
17 Day	**Unit 2.** Population and human development: Demographic trends and issues of education, health, malnutrition and migration. Growth and distribution: Trends and policies in poverty, inequality, unemployment and occupational distribution, International comparison in human development and poverty reduction	
15 Day	**Unit 3.** Agriculture: Nature and importance, Trends in agriculture production and productivity, factors determining productivity, Land reforms, new agriculture strategies and green revolution, rural credit, Agricultural marketing, natural resources and infra-structure development: Performance, problems and policies, MUDRA Yojana..	
15 Day	**Unit 4.** Industry: Growth and productivity, Industrial policy and reforms, Growth and problems of small and cottage scale industries, Role of public sector enterprises in India's industrialization. Trends and performance in services.	
18 Day	**Unit 5.** External Sector - Role of foreign trade, Trends in exports and imports, Composition and direction of India's foreign trade, Export promotion measures and the new trade policies, Recent macroeconomic scenario: National Income, investment, saving and inflation, Current macroeconomic policies and their impact, fiscal policies and monetary policy.	

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Teaching Plan

Class: - B.com – I

Group - I (Paper – I)

Subject: - Financial Account

No.	Topic to be Covered	Remark
18 Day	**Unit 1. Accounting An Introduction** :- Development, Definition, Needs, objectives; Branches of accounting; Basic Accounting Principles, Concepts & Conventions .Accounting Standard: International Accounting Standard only outlines, Accounting Standard in India. Accounting Transaction: Concept of Double Entry System, Concept of Capital & Revenue, Book of original Journal Ledger Sub-Division of journal Cashbook.	
17 Day	**Unit 2.** Final Accounts; Trial balance; Manufacturing accounts; Trading accounts; Profit & loss account; Balance sheet; Adjustment entries. Rectification of errors; Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	
16 Day	**Unit 3.** Depreciation, Provisions, and Reserves; Concept of depreciation; Causes of deprecation; Depreciation, depletion amortization, Depreciation accounting; Method of recording depreciation; Methods for provoding depreciation; Depreciation of different assets; Depreciation of Replacement cost; Depreciation policy; as per Indian accounting Standard provisions and Reserves. Accounts of Non-Trading Instituons.	
18 Day	**Unit 4. Special Accounting Areas:** Hire-purchase and installment purchase system: Meaning of hire-purchase contract, Legal provisions regarding hire-purchase contract; Accounting for goods of substantial sale values, and accounting records for goods small values ; Installment purchase system ; After sales Service.	
15 Day	**Unit 5.** Partnership Accounts: Dissolution of a Partnership Firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.	

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Teaching Plan

Class: - B.com I

Group - I (Paper – II)

Subject: - Business Communication

No.	Topic to be Covered	Remark
17 Day	**Unit 1. Introduction Business Communication:** Definition, Concept and Signification of communication, Basic Forms of communicating; Communication models and process; principles of effective communication; Theories of communication; Self – Development and Communication; Development of positive personal attitudes, SWOT analysis.	
18 Day	**Unit 2.** Corporate Communication Formal and Informal communication network; Grapevine; Miscommunication improving communication Practices in business communication; Group discussions; Seminars; Effective Listening: Principles of effective listening; Factor sffective listing exercises; Oral Written, and video session, Audience analysis and feedback.	
15 Day	**Unit 3. Writing skill: Business letter:** Definition, concepts, structure, advantages disadvantage, need and kinds of business letter, Essentials of effective business letter. Good news and bad new letters; office memorandum. Writing Resume and Letter of job Application.	
16 Day	**Unit 4.** Report Writing: Introduction to a proposal, shot and formal repot, repot preparation. Oral Presentation: Principles of oral presentation, factor af Affecting presentation, sales presentation, training presentation, conduction surveys, speeches to motivation, presentation skill.	
18 Day	**Unit 5.** Non-Verbal Aspects of communicating. Body language Kinesics, proxemics, Para Language. Interviewing skills: Appearing in interviews; conduction interviews; mock interview. Modern Forms Communicating: Fax, E-Mail, video conferencing etc. International Communication for global business.	

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Teaching Plan

Class: - B.com – I

Group - II (Paper- I)

Subject: - Business Mathematics

No.	Topic to be Covered	Remark
16 Day	**Unit-1.** Simultaneous Equations-meaning, Characteristics, Methods of Solving Equations in two Variables-graphical, Substitution, Elimination and Cross Multiplication. Linear Programming – Formulation of LLP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints.	
15 Day	**Unit-2.** Matrices and Determinants: Definition of a matrix : Type of a matrices; Algebra of matrices; Properties of determinants Calculation of values of determinants upto third order ; Logarithms Antilogarithms.	
15 Day	**Unit-3.** Simple interest and Compound Interest. Annuties: Types of annuities Present value and amount of an annuity, including the case of continuous compounding; Valuation of simple loans and debentures; Problems relating to sinking funds.	
18 Day	**Unit-4.** **Ration & Proportion.** **Average, Percentage.**	
18 Day	**Unit-5.** Commission, brokerage, Discount, Profit and loss. **Transportation Problems.**	

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Teaching Plan

Class: - B.com – I

Group – II (Paper –II)

Subject: - Business Regulatory Framework

No.	Topic to be Covered	Remark
18 Day	**Unit-1.** Low of Concept (1872) –I: Nature of contract; Classification offer and acceptance; Capacity of parties to contract, free consent, Considerations, Legality of object; Agreement declared void.	
16 Day	**Unit-2.** Low of Concept (1872) –I: performance of contract, Discharge of contract; Remedies for breach of contract. Special contract; Indemnity; Guarantee bailment and pledge Agency.	
18 Day	**Unit-3.** Sale of Goods Act (1930); Formation of contracts of sale; Goods and their classification, price, Conditions and warranties; Transfer of property in goods; Performance of the contract of sale; Unpaud seller and his rights sale by auction; Hire purchase agreement.	
18 Day	**Unit-4.** Negotiable Instrument Act (1881): Definition of negotiable instrument; Feature; Promissory note; Bill of exchange & cheque Holder in the due course Crossing of a cheque, types of crossing, Negotiation Dishonor and discharge of negotiable instrument.	
18 Day	**Unit-5.** The Consumer Protection Act 1986: Main Provision, Definition of consumer, Consumer Disputes, Grivance redressal machinery; Indian partnership Act 1932. Limited Liabilities Partnership Act 2008. Introduction of Intellectual Property Right Act – Copyright, Patent & Trademark.	

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Teaching Plan

Class: - B.com – I

Group – III (Paper – I)

Subject: - Business Environment

No.	Topic to be Covered	Remark
19 Day	**Unit-1.** Business Environment: Concept Components and importance, Economic Trends (overview): Income ; Saving and investment; Trade and balance of payment , money and Finance.	
17 Day	**Unit-2.** Problems of Growth: Unemployment; poverty; regional imbalances; Social Injustice, Inflation; Parallel economy ; industrial sickness.	
18 Day	**Unit-3.** Role of Government; Monetary and fiscal policy; Industrial policy; industrial licensing. Privatization; Liberalization, Globalization Devaluation, Demonetization, Export-import policy.	
16 Day	**Unit-4.** Economic Planning in India: Need, objectives, Strategy, Review of Previous Plans, Planning Commission. Foreign Exchange Management Act 2000: basic Concept and Main Provisions.	
18 Day	**Unit-5.** International Environment ; Trends in World trade and the problems of developing countries; Foreign trade and economic growth; International economic groupings – GATT, WTO UNCTAD, World bank IMF, FDI	

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Teaching Plan

Class: - B.com – I

Group – III (Paper – II)

Subject: - Business Economics

No.	Topic to be Covered	Remark
18 Day	**Unit-1.** Introduction:- Definition, Nature and Scope of Economocs, Difference Between Micro and macro Economics, method of Economic Study : Induction and Deductive Methods. Basic Problem of Economy, Working of Price Mechanism. Utility Analysis Measurements of Utility, law of Diminishing Marginal Utility Law of Equimarginal Utility.	
16 Day	**Unit-2.** Low of demand: Meaning and Definition, Effecting Factors, Types; Exception of Low of demand. Elasticity of Demand; Concept, Definition, Importance Types and Measurement of Elasticity of demand Factore affecting the Elasticity of Demand.	
18 Day	**Unit-3.** Production: Factors of Production their characteristics and importance. Production Functions: Low of Variable Proportions, return to scale and Equal Product Curve Analysis. Internal and external economies and diseconomies.	
18 Day	**Unit-4.** Market Structure – Concept, Characteristics, Classification Determination of Price under condition of Perfect Competition Imperfect Competition and Monopoly, Monopolistic Competition Oligopoly and Duopoly.	
15 Day	**Unit-5.** Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages Rent Interest & Profit.	

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