

हिन्दी

● **हिन्दी साहित्य का इतिहास:** हिन्दी-साहित्य के इतिहास-लेखन की परम्परा, हिन्दी-साहित्य के इतिहास का काल-विभाजन। आदिकाल- नामकरण, प्रमुख प्रवृत्तियाँ। भक्तिकाल- सामान्य विशेषताएँ, भक्तिकाल की धाराएँ- ज्ञानाश्रयी काव्यधारा, प्रेमाश्रयी (सूफी) काव्यधारा, कृष्णमयि काव्यधारा, रामभक्ति काव्यधारा, चारों काव्यधाराओं की प्रमुख प्रवृत्तियाँ। रीतिकाल-नामकरण, प्रमुख प्रवृत्तियाँ। आधुनिक काल-भारतेन्दुयुग, द्विवेदीयुग, छायावाद, प्रगतिवाद, प्रयोगवाद, नयी कविता, प्रपद्यवाद, नवगीत। विभिन्न कालों के प्रमुख कवि एवं उनकी प्रमुख रचनाएँ। प्रसिद्ध काव्य-पवितयों एवं सूक्तियों के लेखकों/कवियों के नाम।

● **गद्य-साहित्य का उद्भव और विकास:** निबन्ध, उपन्यास, कहानी, नाटक, आलोचना। गद्य की अन्य नवीन विधाएँ-जीवनी-साहित्य, आत्मकथा, संस्मरण, रेखाचित्र, रिपोर्टाज, यात्रा-साहित्य, डायरी-साहित्य, व्यंग्य, इण्टरव्यू, बाल-साहित्य, स्त्री-विमर्श, दलित-विमर्श। युगप्रवर्तक लेखकों के नाम तथा उनकी प्रमुख रचनाएँ।

● **पत्रकारिता:** प्रमुख हिन्दी पत्र-पत्रिकाएँ: प्रकाशन-स्थान, प्रकाशन-वर्ष तथा उनके प्रमुख सम्पादकों के नाम।

● **काव्यशास्त्र:** भारतीय काव्यशास्त्र-काव्य-लक्षण, भेद। रस, छन्द, अलंकार, काव्य-सम्प्रदाय, काव्ययुग, काव्यदोष, शब्दशक्तियाँ।

● **भाषाविज्ञान:** हिन्दी की उपभाषाएँ, विभाषाएँ, बोलियाँ, हिन्दी की ध्वनियाँ, हिन्दी शब्द-सम्पदा।

● **हिन्दी-व्याकरण:** सन्धि, समास, कारक, लिंग, वचन, काल, पर्यायवाची, विलोम शब्द, वर्तनी-सम्बन्धी अशुद्धिशोधन, वाक्य-सम्बन्धी अशुद्धिशोधन, वाक्यांश के लिए एक शब्द, अनेकार्थी शब्द, समोच्चरित-प्राय भिन्नार्थक शब्द, विरामचिह्न, मुहावरा और लोकोक्ति। सज्ञा, सर्वनाम, क्रिया और विशेषण। उपसर्ग, प्रत्यय।

● **संस्कृत-साहित्य के प्रमुख रचनाकारों के नाम एवं उनकी प्रमुख कृतियाँ:** कालिदास, भवभूति, भारवि, माघ, भास, बाण, श्री हर्ष, दण्डी, मम्मट, भरतमुनि, विश्वनाथ, राजशेखर तथा जयदेव।

● **संस्कृत-व्याकरण:** सन्धि-स्वर सन्धि, व्यंजन सन्धि, विसर्ग सन्धि। समास, उपसर्ग, प्रत्यय। विभक्ति-चिह्न (परसर्ग)- प्रयोग एवं पहचान। शब्दरूप- आत्मन्, नामन्, जगत्, सरित्, बालक, हरि, सर्व, इदम्, अस्मद्, युष्मद्। धातुरूप- स्था, पा, गम्, पठ्, हस्, धातु- केवल परस्मैपदी रूप में। काल। हिन्दी-वाक्यों का संस्कृत अनुवाद।

English**Section 'A'****A. Authors and works**

Geoffrey Chaucer, Shakespeare, John Milton, Dryden, Pope William Wordsworth, P.B. Shelley, John Keats, A. L. Tennyson, Matthew Arnold, Charles Dickens, Thomas Hardy, W.B. Yeats, T.S. Eliot. G.B. Shaw, George Orwell, Raja Rao, Mulkraj Anand Nissim Ezekiel, Robert Frost, Ernest Hemingway, Harold Pinter, R.N. Tagore, Girish Karnad, & V.S. Naipal,

B. Literary terms, Movements, Forms, Literary criticism

- * Renaissance,
- * Reformation,
- * Metaphysical Poetry,
- * Classicism
- * Romanticism,
- * The Pre-Raphaelites,
- * Modern Literature
- * Major stanza Forms
- * Sonnet
- * Ballad
- * Mock Epic
- * Elegy
- * Aristotle, Dryden, Dr. Johnson, S.T. Coleridge Wordsworth, Matthew Arnold, T.S. Eliot.

Section 'B' Language

- * A short unseen passage for comprehension
- * Correction of sentences
- * Direct and Indirect narration
- * Transformation of sentences including Active & Passive Voice
- * Synonyms,
- * Antonyms,
- * Homonyms
- * Rearranging the Jumbled sentences
- * Fill in the blanks with appropriate Prepositions.
- * Idioms & phrases
- * One word substitution
- * Figure of speeches
- * Prefixes & Suffixes

Physics

(I) **MECHANICS:-** Vector algebra: scalar and vector products, vector identities, background of vector calculus, concept of line, surface and volume integrals, physical meaning of gradient, divergence and curl, Gauss and Stoke's theorems.

Centre of mass, rotating frame of reference, Coriolis force, motion of rigid bodies, moment of inertia, theorem of parallel and perpendicular axes, movement of inertia of sphere, ring, cylinder and disc. Angular momentum, torque, central force, Kepler's Law, motion of satellite (including geostationary satellite), Galileon transformation, special theory of relativity, Michelson - Morley experiment, Lorentz transformation equations, variation of mass and length with velocity, time dilation, addition of velocities and mass-energy equivalence relation.

Stream line and turbulent motions, Reynold's number, Stoke's law, Poiseuille's formula, flow of liquid through narrow tube. Bernoulli's formula with applications, surface tension, Stress- strain relationship, Hooke's Law, moduli of elasticity and interrelation between them Poisson's ratio, elastic energy.

(II) **THERMAL PHYSICS:-** Concept of temperature and the zeroth law, first law of thermodynamics and internal energy, isothermal and adiabatic changes, second law of thermodynamics, Entropy, Carnot cycle and Carnot engine, absolute scale of temperature. Maxwell's thermodynamical relations. The Clausius- Clapeyron equation, porous plug experiment and Joule Thomson effect.

Kinetic theory of gases, Maxwell distribution law of velocities, calculation of mean velocity, root mean square velocity and the Most probable velocity, degrees of freedom, Law of equipartition of energy, specific heats of gases, mean free path, transport phenomena.

Black body radiation, Stefan's law, Newtons law of cooling Wien's law, Rayleigh Jeans law, Planck's law, solar constant.

Production of low temperatures by adiabatic demagnetization.

(III) **WAVES AND OSCILLATIONS:-** Oscillation, simple harmonic motion, stationary and progressive waves, damped harmonic-motion, forced oscillations and resonance, sharpness of resonance, wave equation, Plane and spherical waves superposition of waves. Fourier analysis of periodic waves- square and triangular waves, phase and group velocities, Beats.

(IV) **OPTICS:** Cardinal points of a coaxial system, simple problems on combination of thin lenses eyepiece- Ramsdon and Huygens eyepieces.

Huygen's principle, conditions for sustained interference Young double slit experiment division of amplitude and wavefront, Fresnel biprism, Newtons rings, Michelson-interferometer, diffraction by straight edge, single, double and multiple slits. Rayleigh's criterion, resolving power of optical instruments.

Polarization, production and detection of polarized light (linear circular and elliptical) Brewster's law, Huygen's theory of double refraction, optical rotation, ploeairimeters.

LESERS:- Temporal and spatial coherence, stimulated emission, basic ideas about laser emission, Ruby and He-Ne lasers.

(V) **ELECTRICITY AND MAGNETISM:-** Gauss law and its applications, electric potential, Kirchoff's laws and their applications, Wheatstone's bridge, Biot-Savart law, Ampere's circuital law, and their applications. Magnetic induction and field strength, magnetic field on the axis of circular coil, Electro magnetic induction, Faraday's and Lenz's law, self and mutual inductances, alternating current, L.C.R. circuits, series and parallel resonance Circuits, quality factor. Maxwell's equations and electromagnetic waves transverse nature of electromagnetic waves, Poynting vector, dia-, para-, ferro-, antiferro- and ferri-magnetism (qualitative approach only), hysteresis.

(VI) **MODEREN PHYSICS:** Bohr's theory of hydrogen atom, electron spin, Pauli's exclusion principle, optical and X-ray spectra, spatial quantization and Stern-Gerlach experiment, vector model of the atom, spectral terms, fine structure of spectral lines J-J and L-S coupling, Zeeman effect, Raman effect, photoelectric effect, Compton effect, de Broglie waves, wave-particle duality, Uncertainty principle, postulates of quantum mechanics, Schrodinger wave equation and its applications to (i) particle in a box (ii) motion across a step potential (iii) one dimensional harmonic oscillator, and engine values, Einstein's and debye theory of specific heat of solids. Band theory of solids energy band, Kronig-Penny model in one dimension, energy gap, distinction between metals, semiconductors and insulators, variation of Fermi level with temperature and effective mass.

Radio activity, alfa, beta and gamma radiations, elementary theory of alpha decay, nuclear binding energy, Semi empirical mass formula, nuclear fission and fusion and nuclear reactors elementary particles, particle accelerator, cyclotron, linear accelerator, Elementary idea's of super conductivity. (VII) **ELECTRONICS:-** Intrinsic and extrinsic semiconductors, PN, junction, Zener diode, and their characteristics, unipolar and bipolar transistors solar cells, use of diode and transistor for rectification, amplification, oscillation, modulation and detection, waves. Logic gates and their truth tables, some applications.

Chemistry

(A) **Physical chemistry** Gaseous-state:- Molecular velocity of gases, mean free path and collision diameter, liquification of gases Joule Thomson effect in ideal and nonideal gases, Joule Thomson coefficient, inversion temperature, Deviation from ideal gas behavior vander waals equation of state, Law of corresponding state, critical constants and their relations with-vander waals constants

Liquid state:- surface Tension, effect of temperature on surface tension, viscosity, effect of temperature and pressure on viscosity.

Solid State:- symmetry in crystal systems, Miller indices close packing, coordination number, structure of NaCl and CaF₂, crystal-defects.

Thermodynamics:- first law of thermodynamics and its limitations, enthalpies of a system, heat of reaction formation, combustion and neutralization, Hess's law and its application bond energy and resonance energy, heat capacities at constant volume and constant pressure, relationship between Cp and Cv extensive and intensive properties, statement of second law of thermodynamics Carnot cycle, concept of entropy, variation of entropy with temperature and volume/pressure, concept of free energy: Helmholtz and Gibbs free energies, Gibbs - Helmholtz equation, thermodynamic criteria of equilibrium, Elapeyron-clausius equation and its application, van't hoff equation and Gibbs- Duhem equation.

Dilute solution:- Ideal and non ideal solutions, Raoult's Law colligative properties (thermodynamic treatment) Lowering of vapour pressure, osmotic pressure, elevation of boiling point and depression of freezing point in solution, abnormal colligative properties molecular weight determination by colligative properties.

Surfacephenomenon- physical and chemical adsorption Fraundlich adsorption isotherm Langmuir state value Gold-number, Hardy-Schulze rule stability of colloids, zeta potential

Chemical Kinetics-Molecularity and order of reaction, rate of reaction Zero first second and third order reactions and their determination effect of temperature on reaction velocity, energy of activation, catalysis, criteria of catalysis, enzymes catalysis, primary salt effect in ionic reactions.

Chemical equilibrium- Law of mass action and its application to homogeneous and heterogeneous equilibria, relationship between Kp and Kc. Le chatelier principle and its application to chemical equilibrium, degree of dissociation and abnormal; molecular Weight hydrolysis of salts, Bronsted & Lewis acid and base. pH, buffer solution, solubility and solubility Product of sparingly soluble salts:-

Electrochemistry- Electrolytic conductance-equivalent, specific and molecular conductances, variation of conductances with dilution of solutions, Kohlusch's law of independent migration of

ions, factors affecting the conductances, types of single electrode and their potentials, EMF of the cell, Nernst equation. EMF and equilibrium constant, concept of concentration cell With and without transference, liquid junction potential chemical cells without transference, fuel cells

B-Inorganic:

Atomic structure- dual nature of particle, Heisenberd's uncertainty principle, Schrodinger's wave equation atomic orbitals, quantum numbers, shapes of s,p,d.

continued.

orbitals, Aufbau principle and Pauli's exclusion principle, Hund's law, electronic configuration of elements, modern periodic table, periodic properties of the elements and their variation in periodic table, chemical bond- Ionic bond, lattice energy, Born-Haber cycle, salvation energy, Covalent bond (Fajan's rule) Bond order, energy level diagram, of homonuclear and heteronuclear molecules, Hybridisation and shapes of inorganic molecules and ions, valence shell electron pair repulsion theory and its application, stability of nucleus, mass defect and nuclear binding energy, radioactivity, nuclear reactions-fusion and fission, carbon dating.

S-block elements-chemistry of lithium and beryllium, abnormal behavior and diagonal relationship.

P-block elements- chemical reactivity of elements in group, inert pair effect, structure of their hydrides and halides, oxyacids of N, P, S and halogens, interhalogens

d-block elements: General characteristics- variable oxidation state, complex formation, magnetic properties, colour and catalytic properties,

coordination compounds-nomenclature, stereo chemistry of metal, complex and isomerisation, effective atomic number and valence bond theory, crystal field theory, crystal field splitting in tetrahedral and Octahedral complexes, crystal field stabilization energy substitution reaction in square planar complexes, electronic spectrum, molecular orbital energy level diagram in tetrahedral and octahedral complexes (bond only) energy level diagram for d-1 and d_9 states

Organometallic chemistry- Definition, nomenclature and classification of organometallic compounds

Bioinorganic chemistry- Structure and function of myoglobin Hemoglobin, chlorophyll and cyano cobalamin-

f-block elements: Electronic structure, lanthanide contraction and its consequences, magnetic and spectral properties and their differences from transition metals ion exchange and solvent extraction methods of separation of lanthanides chemistry of actinides.

A- ORGANIC CHEMISTRY:-

1- ORGANIC CHEMISTRY- Some Basic Principles Techniques:-

(a) Classification of organic compounds

(b) IUPAC Nomenclature of organic compounds

(c) Types of organic reaction

(d) Mechanism of organic reaction- Homolytic & Heterolytic fission of covalent Bond, carbocations, carbanions, carbenes, free Radicals, Electrophile & Nucleophile Sn 1 & Sn 2 reaction

(e) Electronic Displacements in covalent Bond- Inductive effect, electromeric effect Resonance, Hyperconjugation

(f) purification of organic Compounds:- fractional Distillation, chromatography

(g) estimation of elements in organic compounds

2- Isomerism:-

structural & stereo Isomerism, (Geometrical & optical Isomerism) Tautomerism conformation

3- Hydrocarbon:-

a- General methods of preparation, physical & chemical properties of Alkane, Alkene & Alkynes, Location of double bonds by ozonolysis of Alkene.

b- Aromatic Hydrocarbon:-

Benzene- It's structure, resonance Aromaticity preparation & physical and chemical properties of Benzene

Mechanism of electrophilic substitution- nitration, sulphonation, Halogenation, Friedel-Craft's Alkylation & Acylation. Directive Influence of groups in mono substituted benzene. Carcinogenicity & (Toxicity chemistry of toluene)

c- Derivatives of Benzene:-

Preparation, Physical & chemical properties of Phenol, Aniline, Anisole Benzaldehyde & Benzoic Acid

4- Haloalkanes:-

General Methods of preparation, physical and chemical properties preparation and properties of chloroform and Iodoform, Freon

5- Alcohols:- classification, General methods of preparation, Physical & chemical properties, mechanism, of dehydration of Alcohol, Denatured spirit, power alcohol, Absolute Alcohol fermentation of Alcohol Properties of Glycerol.

6. Aldehyde & Ketones:-

General Methods of preparation, Physical & chemical properties, mechanism of Nucleophilic addition. **7- Ether:-** General methods of preparation of ether, physical & chemical Properties of Ether & uses

8- Carboxylic acid and their Derivatives:-

General Methods of preparation physical and properties, Influence of substituents group on acidic nature of carboxylic acid, General methods of preparation & properties of acid, Halide, ester, Amide, & Anhydride

9- Organic compounds containing nitrogen:-

a- Amines:- classification, general methods of preparation & properties, basic character of Amines, Distinction between primary secondary and tertiary amines

b- Nitro Compounds:-

General methods of preparation & properties of nitro compounds

c- Cyanides & Isocyanides:-

General methods of preparation & properties of cyanides & isocyanides

10. Bio-molecules:-

a- Carbohydrates:- classification, Molisch's test of carbohydrate, Glucose & fructose: Preparation & properties, open & Ring structure of glucose mutarotation, Anomers.

b- Proteins: Alpha Amino acids, peptide bond, polypeptide, protein, structure of protein- Primary, secondary & tertiary structure, denaturation of proteins, Zwitter ion, Isoelectric points;

c- Lipids & hormones;

oil & fats introduction, difference between oil & fats properties.

steroids- Natural & Artificial steroid Hormones- classification & physiological function

d- Vitamins- classification & functions deficiency diseases of vitamins

e- Nucleic acids-

Nucleotides & nucleosides, Difference between DNA and RNA primary structure of DNA DNA fingerprinting

11- Polymers:- classification natural & synthetic polymers, methods of polymerisation

(addition & condensation) addition polymers-polythene, Teflon, PVC, BUNA-S, BUNA-N condensation polymer-Nylon 6, Nylon 6,6, bakelite, methyl melamine, Biodegradable & non biodegradable polymers

12- Chemistry in everyday life:-

a- chemicals in medicine:- Analgesic, tranquilizers, Antiseptics, Disinfectant, antimicrobials, antibiotics, antacids, antihistamines, antioxidants

b- chemicals in foods: food preservative, artificial sweetening agent,

c- cleansing agents-difference between soaps & detergents cleansing action of Soaps.

Biology

BOTANY

Section:- (A)-

(1) Plant Diversity-

(a) Classification (Taxonomy) of plants.

(b) Study of habits and habitats, Structure and reproduction of the followings-

(i) Algae

(ii) Bryophyta

(iii) Pteridophyta

(iv) Gymnosperms

(v) Angiosperm with the following families- Cruciferae, Compositae, Malvaceae, Liliaceae and Solanaceae.

(2) Angiosperms- Morphology and Morphological Modifications in roots, stem, leaves etc. Histology, growth, reproduction and development.

(3) Plant Physiology-

(i) Water Relations-Transpiration, Translocation.

(ii) Photosynthesis.

(iii) Respiration and metabolism.

(iv) Plant Nutrition (Nutrients, Nitrogen fixation).

(v) Plant growth regulators (Phytohormones).

(vi) Flowering and Stress Physiology

(vii) Plant growth and movements.

(4) Microbiology- (i) Viruses, Phytoplasma, Archaeobacteria, Eubacteria.

(ii) Fungi (general characteristics, classification growth and reproduction, life cycle).

(iii) Economic importance of Micro-organisms.

(5) Economic Botany-

(i) Medicinal and Aromatic Plants.

(ii) Food Plants.

(iii) Forage and Fodder Plants.

(iv) Fibre Crops.

(v) Fruit and Vegetable Plants.

(vi) Ethnobotany.

(vii) Ornamental Plants.

(viii) Oil Yielding Plants.

(ix) Timber Plants.

(x) Miscellaneous uses of Plants.

(6) Plant Pathology

(i) Causes, effects, control and cure of various Plant diseases.

(ii) Biological Control of Various Plant weeds, diseases and parasites.

(7) Ecology and Environment-

(i) Concept of Ecology and Environment

(ii) Various Habitats & Ecological Niches.

(iii) Ecosystem- Structure and function, Ecosystems stability, carrying capacity, Food-chain, Food-web, Energy flow, Ecological Pyramids, Biomes.

(iv) Population, biotic community.

(v) Bio-geo-Chemical Cycles.

(vi) Ecological Succession.

(vii) Natural Resources and their conservation.

(viii) Biodiversity and its conservation (In-situ and Ex-situ).

(ix) Environmental Pollution- Causes and its ill effects. Air, Water and Soil Pollution, Radioactive pollution, Noise Pollution, Ozone depletion, Acid rain, Eutrophication, Biological magnification, Ocean pollution, Ocean acidification, Control and prevention of various environmental Pollutions. Climate change, global warming and green-house effect, Environmental management. Renewable energy sources, food Security. for rising human population.

Section - B

Zoology

(1) Animal Diversity-

(1) Animal Diversity-

(i) Animal Taxonomy with characteristic features.

(2) Non-Chordates-

(i) Classification of Non-chordate phyla.

(ii) Morphology, Anatomy, Nutrition, Respiration and reproduction of the following Non-chordates- Amoeba, Sycon, Hydra, Ascaris, Cockroach, Pila and Star-fish.

(iii) Parasitic protozoa

(iv) Parasitic adaptation in Helminths.

(v) Economic importance of insects.

(3) Chordates-

(i) Classification of chordates and various-classes of chordates with characteristic features and examples.

(ii) Aquatic adaptation in fishes.

(iii) Origin and evolution of terrestrial chordates.

(iv) Flying adaptations in birds.

(v) Phylogeny of prototheria, Metatheria and eutheria.

(4) Anatomy of— Frog, Pigeon and Rabbit.

(5) Animal Histology- Study of various tissues.

(6) Animal Physiology and Biochemistry-

(i) Nutrition and Digestion.

(ii) Respiration and metabolism.

(iii) Circulation-blood Heart. & Circulatory system.

(iv) Osmo regulation and Excretion.

(v) Movement and locomotion.

(vi) Nervous co-ordination and integration. Sense Organs.

continued...

(vii) Chemical co-ordination (Hormones and pheromones).

(viii) Immune system.

(7) Animal Embryology-

(i) Gametogenesis

(ii) Fertilization in lower and higher animals.

(iii) Types of Eggs and cleavage.

(iv) Organogenesis.

(v) Development of Frog and Metamorphosis.

(vi) Foetal membranes in Birds.

(vii) Placenta in mammals. Regeneration.

(viii) Human reproduction and reproductive physiology.

(8) Cell Biology (Cytology and Molecular Biology)

(i) Prokaryotic and eukaryotic cells- their structure and properties.

(ii) Cell division (mitosis and meiosis).

(iii) Structure and functions of various cell organelles.

(iv) Chromosome structure and their behavior during cell division.

(v) Nucleic acids-Molecular structure of DNA and RNA.

DNA as genetic material

DNA replication and repair.

(vi) Genetic: code central dogma, protein synthesis and Gene expression.

(9) Sr. Genetics-

(i) Mendel's laws of inheritance.

(ii) Co-dominance- and incomplete dominance and interaction of Genes.

(iii) Chromosomal theory of inheritance.

(iv) Linkage and crossing over.

(v) Sex-determination.

(vi) Multiple gene inheritance and polypody.

(vii) Human genetic disorders.

(viii) Mutation.

(10) Biotechnology-

(i) Concepts, principles and scope of Biotechnology.

(ii) Tools and techniques in Biotechnology.

(iii) Recombinant DNA technology and its applications in human welfare.

(iv) Tissue culture, somatic hybridization.

(v) Genetically modified Organisms, GM. crops (Risk and concerns), Gene Bank and ethical concerns.

(11) Organic Evolution-

(i) concept and principles of evolution.

(ii) Origin of life.

(iii) Theories of evolution (Lamarck, Darwin).

(iv) Evidences for evolution.

(v) Neo-Darwinism and synthetic theory of evolution.

(vi) Variations.

(vii) Human evolution.

Mathematics

1. Relation and functions: Types of relations: reflexive, Symmetric, transitive and equivalence relations. Equivalence class. One-one and onto functions, composite of functions, inverse of function, Binary operation.

2. Algebra:

(i) Matrices: Types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric Matrices. Addition, multiplication & scalar multiplication of matrix. Singular and non-singular matrix. Invertible matrices.

(ii) Determinants: Determinants of a square matrix (up to 3x3 matrix) Properties of determinants, Adjoin and inverse of a square matrix. Consistency and number of solutions of system of linear equations by examples. Solving system of linear equations in two or three variables (having unique solutions).

(iii) Theory of equations of degree greater than or equal to two. Arthmatical, Geometrical and Harmonical progressions. Permutations and combinations, Bionomical theorem. Sum of exponential and logerthimic series.

(iv) Prability Multiplication theorem on probability, Conditional probability, Independent events. Total probability. Bayes's theorem distribution.

3. Calculus .

(i) Limit of a function: Continuity & differentiation, derivative of composite functions, and differentiation of different types of functions. Chain rule, Roles theorem and lagrange mean value theorem, Maclaurins & Taylor's series. L. Hospitals rule, partial differentiation, successive differentiation, Leibnitz theorem, equation of tangent & normal to a given curve, Maxima, minima, increasing and decreasing functions.

(ii) Integration: Various methods of intergration definite integration as a limit of sum, Basic properties of definite integrals & evaluation of definite integrals. Application in finding the area under simple curves of spheres, cones & cylinders.

(iii) Differential equations: Order and degree of a differential equations. Formation of differential equations whose general solution is given. Solution of differential equations of 1st order & 1st degree. Linear differential equations with constant coefficients Homogeneous differential equations.

4. Co-ordnate geometry of two dimensions:

Equation of the pair of straight in homogeneous and non homogeneous form. Conditions when homogeneous form. Conditions when non at homogeneous equation of 2nd degree represent circle, parabola ellipse and hyperbola. equation of tangents & normals to the above conics. Common tangents to the two conics, Pair of tangents. Chord of contacts, polarlines to the above conics.

5. Vectors and three dimensional geometry:

(i) Vectors: Vector & scalars. Unit vectors, Direction cosines/ratios of a vector. Multiplication of a Vector by scalar, dot product, cross product of vector and their in physics (work done and moments, angular velocity, projection of a vector on a line. Angle between two vector.)

(ii) Three dimension Geometry: Direction cosine/ratios of line joining two points, Cartesian and vector equation of a line. Coplanar and skew lines, shortest distance between to lines, cartesian and vector equation of a plane. Angle between (a) two lines (b) two planes (c) A line and a plane Distance of a point from a plane. Intersection of two line,

Intersection of a line of plane & intersection of two plane. Equation of a plane passing through the intersection of two planes.

(iii) Equation of a sphere, cones cylinders.

6. Group: Examples- especially the group of nth roots of unity, group of residue class modulo n and modulo p where p is a prime. Subgroups, Homomorphism and isomorphisms properties of Homomorphism. Subgroups generated by a subset. Order of element in a group, Cyclic group, Symmetric group - Sn. Lagrange theorem, Fermat's theorem with application point of view. Narmal subgroups, Fundamental theorem of Homomorphism, Endomorphisim, automorphism, First isomorphism theorem and second isomorphism theorem.

Ring and field with simple examples as $-(\mathbb{Z}_n, +, \cdot)$ & $(\mathbb{Z}_p, +, \cdot)$

Linear Algebra: vector space with examples, subspace, linear dependence and independence, Basis and dimension of a vector space, Quotient space, Sum and direct slim of spaces. Linear transformation, Kernl and image, of a-linear transformation, Rank and nullity of linear transformations, Rank nullity theorem. Composite of linear transformations and its rank & nullity. Singular and non singular linear transformation, Transpose, of a linear transformations, Matrix of a linear transformation. **Vector differentiation:** Gradient, divergence, curl, first order vector identities. Directional derivatives (with application point of view).

Vector integration: Line integral; surface integral, volume integral, Green's theorem, Gauss-divergence theorem, stokes's theorem, (From application point of view).

Rieman integration: Integration of discontinuous functions, Lower and upper integrals of a bounded functions, Integration of a step function and signum function.

Statics: Equilibrium of a body under the action Of-three forces, coplanar forces, Equilibrium of a body Under the Action of a system of coplanar forces, Centre of gravity catenary Friction.

Dynamics: Motion of a projectile in vertical plane under gravity, Work power and energy Direct impact of smooth bodies, Radial and transverse Velocity and acceleration. Tangential and normal acceleration.

Trigonometry: Trigonometric equations , Properties of triangles Inverse circular functions, Height and distance, Complex numbers, D-mioivers theorem & its application, nth roots of unity.

संस्कृत

वैदिक साहित्य

ऋग्वेद – अग्नि सूक्त (1.1.1), विश्वेदेवा सूक्त (1.89), विष्णु सूक्त (1.154), प्रजापति सूक्त (10.121) ।

यजुर्वेद – शिव सकल्प सूक्त (34.1-6) ।

कठोपनिषद् – प्रथम अध्याय (1-3 वल्ली)

ईशावास्योपनिषद् – (सम्पूर्णा)

वैदिक वाङ्मय का संक्षिप्त इतिहास (काल निर्धारण, प्रतिपाद्य विषय)

वेदांग का संक्षिप्त परिचय (शिक्षा, निरुक्त, छन्द)

दार्शनिक चिन्तन

सांख्य दर्शन – सृष्टि प्रक्रिया, प्रमाण, सत्कार्यवाद, त्रिगुण का स्वरूप, पुरुष का स्वरूप (ग्रन्थ-सांख्यकारिका)

वेदान्त दर्शन – अनुबन्ध चतुष्टय, साधन चतुष्टय, माया का स्वरूप, ब्रह्म का स्वरूप (ग्रन्थ- वेदान्तसार)

न्याय / वैशेषिक दर्शन – प्रमाण (प्रत्यक्ष, अनुमान, उपमान, शब्द) (ग्रन्थ- तर्कभाषा, तर्कसंग्रह)

गीता दर्शन – निष्काम कर्म योग, स्थितप्रज्ञ का स्वरूप (गीता : द्वितीय अध्याय)

जैन दर्शन एवं बौद्ध दर्शन का सामान्य परिचय (ग्रन्थ- भारतीय दर्शन –बलदेव उपाध्याय)

व्याकरण

1. लघुसिद्धान्त कौमुदी – संज्ञा प्रकरण, सन्धि प्रकरण, कृदन्त प्रकरण, तद्धित प्रकरण, स्त्री, प्रत्यय, समास ।

2. सिद्धान्तकौमुदी – कारक प्रकरण ।

3. वाच्य परिवर्तन (कर्तृवाच्य, कर्मवाच्य, भाववाच्य) ।

4. शब्द रूप (परस्मैपदी, आत्मनेपदी) – भू, एध, अद्, हु, दा, दिव्, सु, तुद्, रुध्, तन्, की, चुर ।

भाषा विज्ञान

1. भाषा की उत्पत्ति और परिभाषा

2. भाषाओं का वर्गीकरण

3. ध्वनि परिवर्तन, अर्थ परिवर्तन

साहित्य शास्त्र

काव्य प्रकाश/साहित्य दर्पण- काव्य प्रयोजन, काव्य लक्षण, काव्यहेतु, काव्यभेद। शब्द-शक्ति (अभिधा, लक्षणा, व्यंजना)। रस का स्वरूप, रस भेद, विभाव-अनुभाव-सुचारी भाव, स्थायी भाव, भाव का स्वरूप। गुण का स्वरूप एवं भेद। रीति का स्वरूप एवं भेद। अधोलिखित अलंकार का सामान्य परिचय-शब्दालंकार-अनुप्रास, यमक, श्लेष। अर्थालंकार- उपमा, रूपक, उत्प्रेक्षा अतिशयोक्ति, अर्थान्तरन्यास।

दशरूपक- नाट्य लक्षण, नाट्य भेद, अर्थप्रकृति, अवस्था, सन्धि, नायक का स्वरूप एवं भेद। पारिभाषिक शब्द- नान्दी, प्रस्तावना, सूत्रधार, कंचुकी, प्रवेशक, विष्कम्भक, प्रकाश, आकाशभाषित, जनान्तिक, अपवारित, स्वगत, भरतवाक्य।

ध्वन्यालोक (प्रथम उद्योत) – ध्वनि का स्वरूप।

लौकिक साहित्य

रामायण एवं महाभारत: काल निर्धारण, उपजीव्यता, महत्व।

प्रमुख काव्य- किरातार्जुनीयप(प्रथम सर्ग), शिशुपालवधा(प्रथम सर्ग), नैषधीयचरिता (प्रथम सर्ग), रघुवंशम् (द्वितीय सर्ग), कुमार सम्भव (प्रथम सर्ग)।

प्रमुख खण्ड काव्य- मेघदूतम् नीतिशतक।

प्रमुख गद्य काव्य- कादम्बरी (कथामुख), शिवराजविजयम्(प्रथम निःश्वास)।

कथा साहित्य- पंचतंत्र, हितोपदेश।

नाटक- अभिज्ञानशाकुन्तलम् (1-4 अंक), उत्तररामचरिम् (1-3 अंक), मृच्छकटिकम् (प्रथम अंक), रत्नावली, प्रतिमा नाटकम्

चम्पू काव्य- नलचम्पू (आर्यावर्त वर्णन)।

महाकाव्य, खण्डकाव्य, गद्यकाव्य, चम्पू काव्य एवं नाट्य-काव्य की उत्पत्ति एवं विकास।

Economics

1. Micro Economics: Theory of consumer behaviors and demand analysis- Cardinal and ordinal approaches, Indifference curve technique, Theories of production, Laws of returns, returns to scale Production function, Cost and revenue curves, Equilibrium of firm under different market forms- Perfect competition/Monopoly, Monopolistic competition

2. Macro Economics: National Income- Concepts, Components and methods of accounting. Classical and Keynesian theories of employment and income, Consumption and investment function, Inflation and measures to control inflation, Theories of trade cycle.

3. Money and Banking: Concept and function of money, determinants of money supply, Quantity theory of money-. Fisher and Cambridge approach, Keynesian, approach, Central and Commercial banks. Functions, Credit creation, methods .of credit control by central bank.

continued...

4. Public Finance: Role of the Government in economic activities, Taxation- Direct and indirect taxes, Concepts of deficit and Budget of the Union Government of India, Public, expenditure Effects and evaluation, Public debts, Finance Commission, Fiscal Policy.

5. International Trade and Foreign Exchange: balance of trade and balance of payments, Foreign exchange rate - Purchasing Power, Parity and Balance of payments theories. International Institutions- I.M.F., I.B .R. D., I.D .A ., Asian Development Bank, W.T.O. etc.

6. Indian Economy: Basic feature of Indian economy- Planning objectives, approaches, priorities and problems of resource mobilization, Policies relating to population, poverty and unemployment in India, Agricultural policy- issues of food security, developing rural infrastructure and evaluation of policies promoting rural development. Industrial policy- industrial reforms and their impact on industrial growth. Public sector Undertakings, small scale enterprises in India.

7. Elementary Statistics: Meaning and importance of statistics, Data Collection, analysis and representation, Measures of central tendency, Measures of dispersion, Correlation, Methods of sampling, Index-numbers and time series analysis.

Civics (Section-A)

Political Science- Meaning, definitions, nature and scope.

Difference among Politics, Political Science, Political Theory, and Political-Philosophy.

Relationship of Political Science with Science, Sociology, Economics, History, Geography, Psychology and Ethics.

Definition of Civics, its nature and scope.

Citizenship- Meaning, Methods of achieving and loosing citizenship, Merits of an ideal citizen, Impediments in the path of ideal citizenship, Responsibility of a citizen toward environmental protection and conservation.

Concept of state, elements and Theories of origin-Social Contract, Evolutionary and Marxist.

Theories of the functions of state- Liberal, Socialist, and Welfare,

Sovereignty- Power, authority and influence.

Law, Liberty and Equality and Justice.

Constitution Meaning, finds and classification

Concept of Government.

Modern Governments- Federal and Unitary, Parliament and Presidential.

Organs of government- Legislature, Executive and judiciary: Organizations, functions and significance and relationship among them.

Concept of democracy - its meaning, types and theories.

Party system, Pressure Groups, Public opinion,

Methods of election and Franchise.

Concept of Nation, Nationality, Internationality and Non Alignment.

Factional elements of Political System Caste, Language, Communalism and Region.

Recent trends in Political Science- Liberalization, Privatization, Globalization, Libertarianism, Equalitarianism, Concept of governance, State -Market Debates, Panchayati Raj and New Social Movement.

Indian Political Thinkers - Manu, Kautilya, Mahatma Gandhi and Ambedkar.

(Section-B)

History of National Movement in India and the Constituent Assembly;

Indian Constitution and the Preamble; Salient features of Indian constitution, Fundamental Rights and Fundamental Duties, Directive Principles of State Policy, Constitutional Amendment Procedure and Main Constitutional Amendments, Article 370.

Indian Federal System and the Centre State Relations;

Composition of Federal Government and its functioning. Federal Executive: President-Election, Powers and function's, Emergency-powers.

Vice-President-Election and functions

Federal Council of Ministers and the Cabinet: Composition and functioning; Appointment of Prime Minister-Functions and importance;

Federal Legislature: Parliament-Composition, Powers and importance of Rajya Sabha and Lok Sabha; Relationship between Rajya Sabha and Lok Sabha.

Federal Judiciary: Supreme Court; Composition and Jurisdiction; Judicial Review; Public Interest Litigation Cases

Composition and functioning of State Government with special. reference to UP.

State Executive: Governor- Appointment, Powers, Function Privileged and Roles.

Council of Ministers-Composition and functions

Chief Minister: Appointment; Powers, and Relationship the Council of Ministers and the Governor; State Legislature: Composition, Powers and Function Relationship between State Assembly and the Legislative Council

State Judiciary: High Court- Composition; Functions and Jurisdiction

Local Government and Local Self-government

Powers, Functions and Role of District Magistrate

District Courts: Composition and Functions; Lok Adalat Concept of Local Self-government with special reference the 73rd and 74th Constitutional Amendment Act

Public Corporations and Commissions, in India: Planning Commission, Election Commission, Union Public Service Commission, Inter-state Council, Lok Pal and Lok Ayukta.

Foreign Policy of India; Regional Organizations and the United Nations Organization, Human Rights and Non Alignment Movement.

Geography

Meaning and scope of Geography, Approaches and methods to the study of geography, Major Geographical thoughts- Environmental Determinism, Possibilism, Probablism, Regionalism, Logical Positivism and Behaviouralism.

Structure of atmosphere, insolation and heat budget, horizontal and vertical distribution of temperature, inversion of temperature, air pressure belts wind system, movement of wind belt, local winds, humidity and precipitation, rain fall type, cyclone and anticyclone, classification of climates by Koeppen and Thornthwaite, Major climate regions of world.

International structure of earthrock types, Plate Tectonic Theory, Volcanoes and earthquakes folds, faults, and resultant topography, WM Davis's concept of cycle of erosion, works of river, under ground water, sea and glaciers.

Ocean deposits, temperature and salinity of oceanic water, ocean currents, tides and waves, coral islands and coral reefs origin, distribution and environmental importance.

Concept of ecosystem, terrestrial ecosystems types and their distribution, deforestation - problems and conservation, disaster types and management.

Man- environmental interrelationship impact of technology agriculture, industrial and information revolution, population growth and distributional pattern, Demographic Transition Theory, rural and urban settlements.

Concept and classification of resources, Principles of resource conservation, Water, soil mineral and energy, uses, problems and their conservation. Geographical conditions, world distribution, production and trade, major crops - rice, wheat, cotton sugaracane, tea, coffee and rubber major agriculture regions of world, major industrial regions of world, factors of location of industries, major theories of industrial location, international trade, Major trade, blocks, major international transportation routes and harbors.

Culture elements, major cultural realms. races and tribes.

Concept and types of regions salient features of developed and developing countries of word study of some select, regions of world - Anglo, America, European community, Russia, China, Japan, South-east Asian and South west Asia.

India's geographical features - relief drainage system, climate, natural vegetation and soil. major mineral resources- iron - ore. mica. bauxite atomic minerals and energy resources, major agriculture crops of food grains and each crops, recent, trends in agriculture, irrigation and multipurpose projects. industrial development, industrial region, industrial policy, location distribution, production and problems of major industries iron and steel, cotton textile, cement, sugar and paper regional patterns of populations growth and distribution, related problems and their solution regional development disparity - causes and remedial measures, reorganization states - problems and their solution.

History

Physical characteristics

Sources of Indian History

Archeological, Literary foreign Accounts

Unit 1. Prehistory - Early man and his implements of stone, Chalcolith, Bronz and iron.

Proto- History- River valley civilization- harrappan city civilization, Town-planning, Houses, Sanitation, Great Bath, Grainary, Household material, Dancing Bronz girl, dress and decorum, import and export, belief and religion and disposal of dead, art and artifacts, Dockyard, Seals, Main sites and causes of down fall.

Vedic-Culture

Sources-vedic Samhitas, Brahmanas, Aranyakas upanisadas, Dharmasastras, Vedangas.

Early Vedic Culture-

Evolution of social structure, Varna, King and Ratnin, marriage and occupation, Gods and Goddesses.

Later Vedic Culture-

Evolution of caste, occupation, king, vish, power King, Yagyas. (Sacrifices), Purohita- system, Economic conditions- Pani, Niska, agriculture- industries.

Unit 2- Principal religious movements Jainism, Buddhism, Vaisnavism, Saivism.

Unit -3- Political History from 600 B.C. onward.

Sixteen- janapadas republication states foundation and

rise of Magadh-Empire.

Under Nandas

Under Mauryas,

Chandra Gupta, Asoka the Great

Under Guptas, Chandra Gupta to Skand Gupta

Downfall of the Empire

Foreign invasions

Persian, Macedonian Alexander, Indo, Greeks.

Saka-Pahlava, Kusana, Huna

North India from 500 AD to 650 AD.

Later Guptas, Maukharis, Harshvardhan

Principal regional powers (Rajput Age 700 AD- 1200 AD)

Sunga - Kanva

Andhra - Kanva

Andhra - Satavahan

Maukhari - Pushya Bhuti

Gurjana Pratihari, Chandella, Paramar, Chalukya,

Chalukya of Badami and Vengi, Pallava,

Rashtrakutas Chaluky as of Kalyani and Pattadakal, Chola.

Unit 4-

History of economy of Ancient India

Agriculture, Trade and Industry, Srenis, Nanadesis, Coinage system.

Unit 5-

History of Ancient Society

Varna-Jati, Asram, Purusarth, Sanskar, Education

Unit 6-

Art and Architecture

Temples, Stupas, Sculpture, Paintings and minor arts. Ancient inscriptions inscribed on pillars, rocks.

Sectional Mughal Sultnate

Mohd. Ghorl inventions of slave dynasty:- Khiljis dynasty, Tughlaqs dynasty, sayyids and lodis dynasty- Babar as a founder of Mughal empire, Humayun and Sher-shah-suri Expansion of Mughal empire during Akbar to Aurangzeb Decline and Disintegration of the Mughal Empire and Arrival of Britisher. Administration of Mughal and Economic Policies. Vijai Nagar and Bahmani State Rise and downfall Rise of Maratha during Shivaji and cause of Rise and downfall of Maratha.

Administration: Administration of Delhi Sultnate, Administration of Mughal- main feature of administration. Central- Administration, Provincial Administration, Administration of Sher-Shah-Suri.

Land Revenue System: Land revenue system of Sher-Shah-Suri Land revenue system of Akbar. **Religions Policy of Mughal:** Babar Humayun, Religious Policy of Akbar, Din-elahi Religious Policy of Jahangir, Shajahan, Aurangzeb.

Decan Policy of Mughals - From Babar to Aurangzeb.

Mughal's Culture and Civilization Education: Ladies's education, Literature, Architecture, Painting, Music.

Organisation of Army - Mansabdari system of Akbar, Jat, Sawar, The Maratha Military

continued...

System.
Society of Mughal: Social system, Economic system; Trade and Commerce, Religious system.

MODERN INDIAN HISTORY

Mercantilism, European Traders in India in the Seventeenth & eighteenth centuries Arrival of Dutch, French, Portuguese and British East India Company in India.

Rise of the English Power in Bengal- Battle of Plassey, Battle of Buxar and its importance

Clive's Second. Governor of Bengal (1765-67)- Dual Government and its merit & demerit.

Warren Hasting - (1772-85)

Administrative reforms. Judicial reforms, Revenue reforms.

Administrative Reforms of Cornwallis. (1786-93)

Judicial Reforms

Revenue: Reforms Permanent. Settlement of Bengal 1793.

Lord Wellesley (1798-1805) - The subsidiary alliance System.

Mysore Under Haider Ali and Tipu Sultan

Ist Anglo Mysore War

IIInd Anglo Mysore War

IIIrd Anglo Mysore War

IVth Anglo Mysore War

Lord Hastings and Establishment of British Paramountacy in India

The Anglo- Nepal War-(1814-18)

Pindaris War

Hasting's Policy towards the Marathas.

William Bentinck (1825-35)

Abolition of Sati

Reforms of William Bentinck- Social, educational, Economic reform.

Education Policy of Lord Mecawley-

Ranjeet Singh Achievement: Early career of Rajneet Singh, Administration, Land

Revenue, Military Administration.

Lord Dalhousie (1848-56)

The Doctrine of Lapse

The Annexation of Awadh, Reforms of Dalhousie

Revolt 1857- Causes of Revolt.

Land Revenue system: The Permanent settlement, The Mahawari System, The Rayotwari System.

Lord Curzon (1899-1905) Partition of Bengal

Religious and Social Reforms (Cultural awakening)

The Brahm Samaj, The Prarthana Samaj, The Arya Samaj, The Ram Krishna Movement, The Theosophical Movement, Muslim Reform Movement, The Wahabi Movement, The Aligarh Movement.

Rise and Growth of Indian National Movement- Assesment of the Policies of the Moderates, Causes of rise of Extrenism, Home Rule Movement, The Revolutionary

Terroist. Movement, Saimon Commission Khilafat Movement, non-cooperation movement, The Civil Disobedience Movement, The role of Mahatma Gandhi in India's

Struggle for Independence.

Eminent National Leader-of India

Ram Mohan Roy- Role in Modernization of India, Dadabhai Naoroji 1825-1917, Gopal Krishna Gokhale, Bal Gangadhar Tilak, Lala Lajpat Rai, Mahatma Gandhi, Jawahar Lal

Nehru.

Rise Muslim Commission- Act of Sir Syed, Foundation of Muslim League, Two Nation

Theory, Hindu Maha Sabha Mount Batten's Plan Partition of India.

Act- The regulating Act of 1773

Pit's Charter Act 1833

Act 1909

Act 1919

Act 1935

First Phase of Independence

The Indian Independence Act 1947

Princely States and Integration of States.

Murder of Mahatma Gandhi.

First Five Year Planes 1955-56

Relation with Neighbour State- Pakistan, China The Chinese Attack 1962 Bangladesh.

Sociology

Unit-I

Basic Sociological Concepts

Sociology : Meaning, Nature and scope

Society: Concept and characteristics.

Other Related Concepts: Institution, Community, Association Institution Social groups, Status and Role, Culture and Civilization.

Unit-II

Social Processes Cooperation, Competition, Conflict, Acculturation, Socialization,

Stratification and Differentiation.

Unit-III

Classical and Contemporary: Social Thinkers

Western Thinkers : August Compte, Karl Marx, Herbert Spencer, Emile Durkheim, Max

Weber.

Indian Thinkers: M.N. Srinivas, G.S. Gurlye, Arbindo Mahatma Gandhi, Radhakamal

Mukerjee.

Unit-IV

Contemporary Sociological Theories

Phenomenonlogy and Ethnomethodology, Functionalism, Structuralism, Marxism,

Conflict Theory, Exchange Theory and Symbolic Interactionism.

Unit-V

Social Change and Social Control

Social Change : Concept, Factors and Theories.

Social Control : Concept means and Agencies

Social Change Processes : Industrialization, Urbanization;

Modernizations, Westernization and Globalisation.

Role of Media in Social change and Social control.

Unit-VI

Indian Society and Culture

Caste, Class, Marriage and Family

Sanskritisation, Secularisation Great Tradition & Little Tradition, Universalization &

Parachialisation.

Unit-VII

Indian Rural Social Systems

Caste System, Jajmani System, Kinship,

Panchayati Raj System

Unit-VIII

Contemporary Indian Social Problems.

Poverty, Unemployment, Gender Inequality, Corruption, Atrocities Against Weaker

Sections - Women, SCs, STs, and OBC's Problems of Minorities.

Unit-IX

Social Research: Methods and Processes

Social Research: Meaning and Various Steps of Social Research,

Designs of Social Research - Meaning and Types

Methods & Techniques of Data collection :

Statistical Analysis : Mean, Median, Mode

Standard Deviation and Correlation.

Education

I- Meaning and scope of education aims of education agencies of education, primary, Secondary and higher education in U.P. - nature and organization, life long education, Continuing education, history and problems of Indian education - Education during Vedic, Buddhist, Medieval British and Post Independence period, Constitutional Provision for education in India, Recommendations of various commissions and committees on education, Problems of primary Secondary and Higher education in Indian, Education for National Integration, education Unemployment, Language controversy, Women education, Inclusive education, Environment education, Adolescence education, Valne education, Education and globalization.

II- Relationship between Education and Philosophy, Aims of education, curriculum methods of teaching and discipline according to-Idealism, Naturalism, Realism Purifanism and Existentialism, Education thought of Mahatma Gandhi, Rabindra Nath Tagore, Sri Arbindo, Madan Mohan Malviya Sir Sayed Ahmad, Rousseau and John Dewey, Meaning and Scope of educational sociology, culture and education, Urbanization and modernization Their impact on education, Social change and education, Religion and education. Education for socialization, Deschooling and Futurology in education.

III- Education Psychology - meaning and importance, growth and development, Physical mental social, emotional and moral development during infancy, Childhood and adolescence, Individual difference Theories of Personalty - Freud, Adlen, Carl Ingard Erickson, problem solving and creativity - nature and development, memory and forgetting concept formation, Thinking Theories Piaget and Bruner, guidance and counseling-meaning need services and types.

IV- Educational Research - meaning approaches Qualitative and Quantitative Steps of descriptive Historical, Experimental and Action, Research, Review of Related Literature, Hypothesis- formulation and testing, Techniques of sampling, Characteristics of a good research reports.

Measures of central tendency - mean median and mode Measures of dispersion standard deviation, quartile deviation percentile Standard score Z, and Stanine, Normal Probability Curve- Characteristic and dues correlation, t, F and Chisquare test.

V- Measurement and Evaluation in education - meaning, scope and importance; Taxonomy of educational objectives, writing objectives in behavioural terms, Reliability, Validity and Norms - types and calculation; construction of Achievement tests, Essay type and Objective type tests, Norm reference and Criterion Referenced tests, Formative and Summative Evolution, Continues and Comprehensive Evaluation, Choice Based Credit system; Measurement of Attitude, Aptitude, Personality Intelligence, Interest and Creativity, Tools of Measurement - Interview, Observation, Rating Scale, Questionnaire and Sociomeny, Grading and Scaling of Marks, Qualitative analysis of data.

VI- Distances education - meaning and importance, Open School and Open University. Educational Technology meaning and approaches, Computer assisted instruction, Programmed instruction. Models of teaching Training technology integrated education, Web based learning, System Approach in Education.

Meaning and nature of school management, functions of School management, institution planning, Supervisor nature and techniques, Role of Principal, school time table, school budget, Program evaluation steps and uses different agencies of administration at central, state and local level.

Urdu

PART - I

1. اردو زبان و ادب کا آغاز و ارتقاء

دکن میں (بہمنی دور، عادل شاہی دور، قطب شاہی دور)

شمالی ہند میں (اردو نظم و نثر کا ابتدائی زمانہ، بکت کہانی، کر بل کتھا)

2. اردو ہندی کا باہمی رشتہ

3. لکھنؤ اور دہلی کے دبستان شاعری کا مطالعہ (استعمال زبان کے خصوصیات اور امتیازات)

4. اردو ادب کی تحریکیں اور رجحانات (سر سید تحریک، ترقی پسند تحریک، حلقہ ارباب ذوق، جدیدیت)

5. اردو نثر اور فورٹ ولیم کالج اور دلی کالج (میرامن، حیدر بخش حیدری، بلو لال جی، ذکاء اللہ، ماسٹر رام چندر)

PART - II

6. اردو اصناف نثر داستان (فسانہ عجائب) ناول (امراؤ جان ادا، آخر شب کے ہم سفر) افسانہ- پریم چند (کفن، گھر کی بیٹی)

منٹو (ٹوبہ ٹیک سنگھ) بیدی (لاجوتی) عصمت چغتائی (چوتھی کا جوڑا) کرشن چندر (داور پل کے بچے) حیات اللہ

انصاری (آخری کوشش) ناولٹ- سجاد ظہیر (لندن کی ایک رات) قاضی عبدالستار (رضو باجی) انشائیہ اظہر و

مزاح- پطرس بخاری (سویرے جوکل آنکھ میری کھلی) رشید احمد صدیقی (ارہر کا کھیت) مشتاق احمد یوسفی

(چار پائی اور کپڑے) فرحت اللہ بیگ (ایک وصیت کی تعمیل) کنھیا لال کپور (غالب ترقی پسندوں کی محفل میں)

- شوکت تھانوی (سودیشی ریل) مضامین - محمد حسین آزاد (شہرت عام اور بقائے دوام کا دربار) مولوی عبدالحق
(نام دیوبالی) مہدی افادی (اردو نثر کے عناصر خمسہ) خطوط - غالب (اردوئے معلیٰ) ابولکلام آزاد (چڑیا چڑے
کی کہانی) ابتدائی پانچ خطوط - سفرنامہ - یوسف خاں کمل پوش (عجائب فرنگ) سید احتشام حسین (ساحل اور
(سمندر) سوانح - حالی (حیات سعدی) عصمت چغتائی (کاغزی پیرہن)
7. اردو تحقیق و تنقید - آزاد، حالی، شبلی، امداد امام اثر، حافظ محمود شیرانی، مولوی عبدالحق، قاضی عبدالودود، امتیاز علی خاں
عرشی، مسعود حسن رضوی، احتشام حسین، آل احمد سرور، کلیم الدین احمد، مسیح الزماں، شمس الرحمن فاروقی،
گوپی چند نارنگ، رشید حسن خاں، حنیف احمد نقوی
8. اردو صحافت کا آغاز و ارتقاء - مولوی محمد باقر (دہلی اردو اخبار) منشی سجاد حسین (اودھ پنچ) ظفر علی خاں (زمیندار)
ابولکلام آزاد (الہلال) حسرت موہانی (اردوئے معلیٰ) عبدالماجد دریا بادی (صدق جدید) ظ - انصاری
(انقلاب) حیات اللہ انصاری (قومی آواز)
9. اردو ڈراما - آغاز و ارتقاء - امانت لکھنوی (اندر سبھا) آغا حشر کشمیری (سلورنگ) امتیاز علی تاج (انارکلی)
عجاز حسین (سید انشا) حبیب تنویر (آگرہ بازار)
PART - III
10. اردو اصناف شاعری - (غزل، نظم، مرثیہ، مثنوی، قصیدہ، رباعی، شہر آشوب، واسوخت)
غزل - محمد قلی قطب شاہ، ولی، درد، میر، انشا، مصحفی، آتش، ناسخ، غالب، مومن، یگانہ فراق، ناصر کاظمی
نظم - نظیر اکبر آبادی (آدی نامہ، روٹیاں، گلہری) اکبر الہ آبادی (ایک فرضی لطیفہ، جلوہ در بار دہلی، مستقبل)
اقبال (حقیقت حسن، خضر راہ، طلوع اسلام) چکبست (رامائن کا ایک سین) سرور جہان آبادی (بیر بہوئی)
جوش (البیل صبح، کسان) فیض (رقیب سے، زنداں کی ایک شام) ی - م - راشد (سباویراں) میراجی (کلرک
کافحہ محبت) مجاز (آوارہ) اختر الایمان (ایک لڑکا) وحید اختر (کرسی نامہ)
مرثیہ - میر ضمیر (کس نور کی مجلس میں مری جلوہ گری ہے)
میر انیس (جب قطع کی مسافت شب آفتاب نے)
مرزا پیر (کس شیر کی آمد ہے کدرن کانپ رہا ہے)
مثنوی - میر حسن (سحر البیان) دیا شنکر نسیم (گلزار نسیم) مرزا شوق لکھنوی (زہر عشق)
قصیدہ - سودا (اٹھ گیا، بہمن ودے کا چمنستاں سے عمل)
ذوق (زہے نشاط اگر کیجئے اسے تحریر)
غالب (دہر جز جلوہ کیتائی معشوق نہیں)
محسن کاکوروی (سمت کاشی سے چلا جانب تھر ابادل)
رباعی - انیس، دبیر، حالی، اکبر، امجد حیدر آبادی، رواں، فراق
شہر آشوب - سودا (تھیک روزگار)

PART - IV

11. اردو قواعد
(الف) اسم، ضمیر، فعل، صفت، حرف اور اس کی قسمیں
(ب) استعارہ، تشبیہ، مجاز مرسل اور کنایہ
(ج) صنائع و بدائع - لف و نشر (مرتب و غیر مرتب) تلمیح، تلمیح، حسن تعلیل، تجنیس (نام اور ناقص وزائد)
سوال و جواب، تنسیق الصفات، ترصیح، سیاق و اعداد، تضاد، ایہام تضاد اور مراعاة النظر

Commerce**1. Accounting**

Principles, concept and conventions of accounting, Accounting Standards in India, Journal, Ledger, Trial Balance, Rectification of errors, Bank reconciliation Statement, Final Accounts (with adjustment entries), Depreciation, Reserves and Provisions, Consignments Account, Joint Venture, Single Entry System, Receipt and Payment Account, Income and Expenditure Account, Capital and Revenue receipt and expenditures, Bills of Exchange, Partnership Account (Admission, Retirement, Death, Dissolution)

Company Accounts Issue of Shares and Debentures, Forfeiture of Shares, Reissue of forfeited shares, Redemption of debentures, Redemption of Preference Shares, Bonus Shares, Profit Prior to and Post to Incorporation, Company's Final Accounts.

Ratio Analysis, Fund Flow Analysis, Cash Flow Analysis.

Cost Accounting- Meaning and objectives, Elements of Cost Methods of Costing - Unit Costing, Process Costing, Contract Costing.

Techniques of Costing - Marginal Costing Standard Costing, Budgetary Control.

Management Accounting, Meaning objective scope and importance, Difference between

financial accounting and management Accounting.

Tax Accounting - Agricultural Income, Assesses, Previous and Assessment year.

2- Business Organization and Management:

Meaning of trade, industry and commerce, Forms of business organization (Sole proprietorship, Partnership, Company and Cooperative Society) Public Private Partnership (PPP), Type of public Enterprises Plant Location, Business Combination, Rationalization, Scientific Management Home and Foreign Trade, Business Services (Banking Insurance, Warehousing, Transportation and Communication Business and Official letters. Management - Meaning Nature, Scope, Principles of Management Organization Structure, Management Functions, Planning Organization Staffing Directing (Motivation, Leadership) Decision making Controlling Co-ordination).

Contribution of F.W. Taylor, Henry Fayol, and Elton Mayo in management.

3- Business Environment: Concept, Nature and Importance, Elements of Economic System Government, Policies, Political, Legal and Socio-Culture environment, Multinational Corporations, Liberalization, Privatization and Globalizations, World Trade Organization, Stock and Produce Exchange. Securities and Exchange Board of India (S.E.B.I.)

4- Business Statistics- Meaning Scope and importance of Statistics, Frequency Distribution, Graphs and Diagrams, Measurement of Central Tendency (arithmetic mean, median and mode), Dispersion and Skewness, Index Number, Correlations, Analysis of Time series, Methods and uses of Chi Square Test, Agricultural Statistics, Industrial Statistics Defects and reforms in Indian Statistics.

5- Business Economics: Concept Nature and significance, Principles of Business, Demand Analysis Production Analysis, Distribution Theories Rent, Wages, Interest and profit, Business cycles, Indifference Curve Analysis, National Income, Population theories, Problems of unemployment.

6- Money and Banking: Meaning and Functions of Money, Monetary standard (Monometallism and Bimetallism), Gresham's Law, Kinds of money, Quantity Theory of Money, Inflation and Deflation, Money Market and Capital market.

Meaning and functions of Bank, Types of Banks, Merchant Banking, E-Banking Net Banking Foreign Exchange, Exchange Control.

7- Auditing and Insurance: Meaning Objective and Scope of auditing, Techniques of auditing (Routine Checking and Test Checking), Classification of auditing Internal Check and Internal audit Vouching,

Company audit Appointment, Remuneration, Qualifications, Rights Duties and liabilities of company auditor Audit Report, Investigation.

Meaning and Principles of Insurance, Functions and Scope of Insurance Essential elements of Insurance contract, Types of Insurance, Insurance Regulatory and Development Authority (I.R.D.A.).

8- Entrepreneurship and Small Business: Meaning, Functions and Types of Entrepreneurship, Qualities of an Entrepreneur, Main Theories of Entrepreneurship, Role of Small and Medium Enterprises in, Indian Economy Role of Government and other Instructions in the development of Entrepreneurship, and Small and Medium, Enterprises in India. Problems of Small and Medium Enterprises in India.

Home Science**I- Human Physiology**

(i) Cell, tissue and systems.

II- Health and Hygiene

(i) Personal Hygiene

(ii) Home & Employment Hygiene

(iii) Health Hygiene role in the community development

(iv) Environment Pollution

(v) Diseases commutable and non- commutable & their management.

III- Human Development & Family Relation

(i) Theories of Development

(ii) Growth Development

(iii) Development tasks of the life span

(iv) Nursery school and its types

(v) Play pattern of different stages

(vi) Family & Relation

(i) Family and types

(ii) Role of Family Needs & Fulfilment and duties of Family member

(iii) Marriage and family relations adjustments

(iv) Domestic & Social Problems:-

a) Domestic Violence

b) Drug abuse

c) Dowry

d) Disparities

IV Food & Nutrition

(i) Food Nutrition Food groups Balanced diet

(ii) Function of food

(iii) Food Deficiency diseases & symptoms & remedies

(iv) Food adulteration & related Problem.

(v) Method of cooking

(vi) Meal Plans for Different age groups & therapeutic diets

V Home Management

(i) Management, Resource & their classification

(ii) Management of Resources Management Process and Decision Making

(iii) Work and Work Simplification

(iv) Income, Expenditure Saving & Investment

(v) Consumer Education, right, responsibilities legal advice & Act.

VI Textile and clothing

(i) Fibre and its classification & properties

(ii) Manufacturing of textile fibers

(iii) Yarns classification

(iv) Fabric Construction

(v) Fabric finishes Dyeing, Printing, Special finishes

(vi) Traditional textiles & Embroideries of India

(vii) Basic Design Current stitching of garments.

(viii) Care of garments & stain removal.

VII Extension Education

(i) Community Development Programmers

(ii) Communications Systems Function elements of communication

(iii) Formal & Non formal Education

(iv) Extension Education meaning and scope

(v) Leadership in Home Science education

(vi) Qualities of a good leads.

Secretary