

SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF LECTURERS IN COLLEGE TEACHER EDUCATION/INSTITUTE OF ADVANCE STUDY IN EDUCATION

<i>Papers</i>	<i>No.of Questions</i>	<i>Maximum Marks</i>	<i>Duration (Minutes)</i>
<i>PART-A: Written Examination (Objective Type)</i>			
Paper-1: General Studies	150	150	150
Paper-2: Concerned Subject (One only)	150	300	150
<i>PART-B: Interview (Oral Test)</i>		50	

1. The Candidates have to choose one subject from the following for Paper-2:

English	Telugu	Hindi
Urdu	Mathematics	Physics
Chemistry	Botany	Zoology
History	Economics	Political Science
Public Administration	Geography	Philosophy
Sociology	Psychology	

N.B:

- The selections to these posts will be based on the total marks obtained by the candidates at the written examination and oral test taken together subject to the rule of reservation.
- The eligible candidates will be called for an interview at the ratio of 1:2 with referenced to the number of vacancies duly following the special representation as laid down in General Rule-22 and 22-A of A.P. State and Subordinate Service Rules.
- Appearance to Written Examination and Oral Test is compulsory for final selection.
- For Paper-2 i.e., concerned subject the candidates have to write the subject of study at Post Graduate level but not other subject

SYLLABUS

GENERAL STUDIES

01. SCIENCE AND TECHNOLOGY:

- General Science and Technology.
- Role and impact of science and Technology on India's development.

(Questions will cover general appreciation and understanding of matters of everyday observation and experience as may be expected of a well-educated person who has not made a special study of science and technology disciplines).

02. INDIAN HISTORY AND CULTURE:

- Modern Indian History from 19th century to the present.
- Nationalist Movement and Constitutional development.
- Indian Culture and Heritage including architecture, Fine Arts, Dance Forms, Music, Paintings, Folk Arts and performing Arts.
- History of Andhradesa Society, Culture, Geography and Economic Development.

03. INDIAN POLITY:

General and broad understanding of the structural (institutions) and functional (processes) aspects of Indian Political System

04. INDIAN ECONOMY AND GEOGRAPHY OF INDIA:

- Structure of National Economy.
- Economic Development (including planning) since independence.
- Economic Reforms.
- Physical, Economic and Social Geography of India.

05. CURRENT EVENTS:

Current Events of Regional, National and International importance

06. General Mental Ability (reasoning and analytical abilities)

ENGLISH

Detailed Study of literary age (19th Century) viz.,

The period of English Literature from 1798 to 1900 with special reference to the works of the major writers including Words worth, Coleridge, Byron, Keats, Shelley, Lamb, Hazlitt, Thackeray, Dickens, Tennyson, Browning, Arnold George Eliot, Calyle and Ruskin.

Study of the following Texts:

- | | | | |
|-----|---------------------|---|-------------------------------------------------|
| 1. | William Shakespeare | : | 'Macbeth', 'Hamlet', 'Julius Vrsdst', 'Tempest' |
| 2. | John Milton | : | 'Paradise Lost', -Books I & II |
| 3. | Alexander Pope | : | .'The Rape of the Lock' |
| 4. | William Wordsworth | : | 'The Immorality Ode', 'The Tin Tern Abbey' |
| 5. | John Keats | : | 'Ode to a Nightingale' |
| 6. | P.B. Shelley | : | 'Ode to the West Wing' |
| 7. | Jane Austen | : | 'Pride and Prejudice'. |
| 8. | Charles Dickens | : | 'A Tale of Two Cities' |
| 9. | Thomas Hardy | : | 'The mayor of Casterbridge' |
| 10. | W.B. Yeats | : | "Byzantium", 'The Second Coming'. |
| 11. | T.S. Eliot | : | 'The Waste Land'. |
| 12. | D.H. Lawrence | : | 'Sons and Lovers'. |
| 13. | Mulk Raj Anand | : | 'The Big heart' |
| 14. | R.K. Narayan | : | 'The Man eater of Malgudi' |

HINDI

- I. Study of the following ten authors and poets:
 1. Kabir
 2. Tusedidas
 3. Bihari
 4. Surdas
 5. Acharya Ramachandra Shukla
 6. Premchand
 7. Prasad
 8. Pant
 9. Nirala
 10. Dinakar

- II. Appreciation of the popular couplets of Tulsī, Kabir, Rahim, Vrinda etc., and a few lines from modern poets of Prasad, Pant etc.

- III. Origin and development of prominent literary genres in modern Hindi, e.g. Novel, Short Story, Drama, Criticism.

- IV. The study of the following eight trends of the history of Hindi Literature.
 1. Gyan Margi Shakha
 2. Prem Margi Shakha
 3. Ram Bhakti Shakha
 4. Krishna Bhakti Shakha
 5. Riti kavya
 6. Chayavada
 7. Pragativada
 8. Nai Kavita

- V. History of various aspects of Hindi Language, eg:
 1. Grammatical and lexical features of Apabhraṅsa, Avahatta and early Hindi.
 2. Evolution of Khari Boli Hindi as literary language during 19th Century
 3. Development of Hindi as Rastra Bhasha during freedom struggle and as official language of Indian Union since Independence.
 4. Major Dialects of Hindi and their inter-relationship
 5. Functional and significant grammatical features of standard Hindi
 6. Origin and development of Devanagari script and its role in standardization of Hindi language.

URDU

01. The study of the following Ten Authors and Poets:
- | | |
|-----------------------------|----------------------|
| 1. Mohammad Quli Qutub Shah | 6. Sir Syed. |
| 2. Wali. | 7. Hali. |
| 3. Meer. | 8. Iqbal. |
| 4. Anees. | 9. Premchand. |
| 5. Ghalib. | 10. Krishna Chander. |
02. Appreciation of couplets of renowned poets.
03. The Study of the following eight trends of the History of Urdu Literature.
1. Development of Urdu under the Qutubshahis, and the Adil Shahis.
 2. Delhi School.
 3. Lucknow School.
 4. Fort William College.
 5. Aligarh movement.
 6. Iqbal and his Age.
 7. The Contribution of Jamia Osmania.
 8. Impact of progressive movement.
04. Study of various aspects of Language and Literature.

TELUGU

- I.**
 - a) Study of classical poets – their age and works – particular selections from Nannaya, Tikkana, Errapragada, Salva Poets i.e., (Nannechoda, Mallikarjuna Pandita, Palakuriki Soma), Nachana Somana – Bhaskara Ramayana poets and Ranganatha Ramayana Poet – Srinatha – Pothana – Pillalamarri Pinaveerabhadra – Raurana – Jakkana – Anantamatya – Koravi Goparaju – Nandi Mallaya and Ghanta Singana – Ashta Diggaja Poets – Tallapaka Poets – Krishnadeva Raya – Ponnaganti Telangana – Chemakura Venkataraju – King Poets of Tanjavore – Women Poets – Kuchimanchi Poets – (Jaggana – Timmana).
 - b) Vemana, his philosophy – Observations and views on his times – his importance as commentator on contemporary times – his relevance now.
- II.**
 - a) Study of literary trends – Salient features of the ages, forms etc., Itihasa – Purana Prabhandha – Sataka – Folksong – Yakshagana – Samkertana Literature – Historical poem, Prose works classical and Modern – Novel-short story – Essay - One Act Play, etc.
 - b) Classical and Neo-classical trends – Modern Age.
- III.** Study of Modern Poets – Modern Trends – their works, Gurajada – Rayaprolu – Veereshalingam – Chilakamarthi – Panuganti – Viswanatha, Devulapalli, Basavaraju, Pingali, Katuri, Duvvuri, Puttaparthi, Sri Sri and leading Modern Poets – Trends – Romantic Movement – Progressive Movement – Digambara Poets etc.
- IV.** Study of Telugu Grammar and General Prosody – Balavyakaranam and Praudha Vyakaranam.
- V.** Study of History and Evolution of Telugu language – From the early period of Modern period – The place of Telugu among the language families of India in general and the Dravidian family in particular Geographical positions and distribution – dialectal forms etc.
- VI.** Study of Philology – Linguistics and Semantics – Modern period: Evolution of Telugu through linguistic and literary movements (like the spoken Telugu movements, etc.)
- VII.** Study of Evolution of Telugu literature from the early period of Modern period covering all the ages.
- VIII.** Study of Aesthetics and Literary criticism (Eastern and Western outlook)
- IX.** Study of Sanskrit Grammar and Kavyas: Elementary knowledge of Sanskrit Grammar – Simple and standard texts for prose and poetry – Hitopadesa and Kalidasa's works.

ECONOMICS

- I. 1. National Economic Accounting, National Income Analysis Generation and Distribution of Income and related aggregates: Gross National Product, Net National Product, Gross Domestic Product & Net Domestic Product (at market prices and factor costs): at constant and current prices.
2. Price Theory: Law of Demand: Utility analysis and Indifference Curve techniques, Consumer equilibrium, Cost curves and their relationships; equilibrium of a firm under different market structures; pricing of factors of Production.
3. Money and Banking: Definitions and functions of money (M1, M2 M3): Credit creation; Credit; Sources, Costs and availability; theories of the Demand for money.
4. International Trade: The theory of comparative costs; Ricardian Heckscher Ohlin; the balance of payments and the adjustment mechanism. Trade theory and economic growth and development.
5. Economic growth and development; Meaning and measurement; characteristics of under development; rate and pattern, Modern Growth; Sources of growth distribution and growth-problems of growth of developing economics.
- II. Indian Economy-India's economy since Independence; trends in population growth since 1951, Population and poverty; general trends in National Income and related aggregates; Planning in India Objectives, Strategy and rate and pattern of growth; problems of Industrialization strategy; Agricultural growth since Independence with special reference to food-grains; unemployment; nature of the problem and possible solution, Public Finance and Economic Policy.
- III. Identification of backward regions and the problems of regional development with special reference to Andhra Pradesh.

MATHEMATICS

Real Analysis: Continuity and differentiability of real functions.; Uniform continuity, Sequences and series of functions. Uniform convergence. Functions of bounded variation. Riemann integration.

Complex Analysis: Analytic functions. Cauchy's theorem Cauchy's integral formula. Laurent's series. Singularities. Theory of residues – Conformal mapping.

Abstract Algebra: Groups – Sub-groups – normal subgroups Quotient group Homomorphism – Fundamental theorem of Homomorphism, Permutation groups: Cayley's theorem – Rings – Subrings – Ideals – Fields – Polynomial rings.

Linear Algebra: Vector spaces – Basis and dimension – Linear transformations – Matrices – Characteristic roots and characteristic vectors – systems of linear equations – Canonical forms – Cayley – Hamilton theorem.

Differential Equations: First order ordinary differential equations (O.D.E) and their solutions – Singular solutions. Initial value problems for first order O.D.E. General theory of homogeneous and non-homogeneous linear differential equations, variation of parameters. Elements of first order partial differential equations (PDE).

Co-ordinate Geometry of Three Dimensions: The Plane – The straight-line – Sphere and cone.

PHYSICS

I. Mathematical Physics:

Vectors: Vector operators like DCI & grad , div . & curl . Surface and volume integrals – Theorems of Gauss, Stokes, & Green.

Matrices: Quality, addition and subtraction, multiplication of matrices, inverse of a matrices, similarity and unitary transformation Characteristic equation of a matrix Eigen values – Eigen vectors Square, diagonal, unit, symmetric, and skewmatrix-Hermitian and unitary matrix.

Tensors: Tensors of any order –Transformation relation Covariant & Contra-variant tensors-Christoffel symbols.

Fourier Analysis: Trigonometric Fourier series – Evaluation of coefficients – Exponential Fourier series.

II. Classical Mechanics:

General Theorems of mechanics of mass points – Principales of Virtual work – De-Alembert's principle – Lagrange's equation of motion – Hamilton's principle – Hamilton's Equation of motion – Principle of least action – Canonical transformations = Poisson bracket. Rigid body motion – Euler's theorem on rigid body motion – moment of inertia-tensor – heavy Symmetrical top.

III. Electromagnetic Theory:

Generalisation of Ampere's Law – Derivation of Maxwells equation – Pointing theorem – Transverse nature of Electromagnetic waves – propagation & Conducting and non-conducting media – metallic reflection – Propagation of light in crystalline media – Fresnel's Theory of double refraction.

IV. Special Theory of Relativity:

Galilean Transformation – Newtonians Relativity – Michelson's Morley Experiment – Postulates of special theory of relativity Lorentz's transformation – Relativistic particle mechanics Equivalence of mass & energy – Covariance of Maxwell's equation.

V. Statistical Mechanics:

Generalised coordinates & momenta-phase space, Liowellies Theorems – Maxwell Boltzman statistics – Distribution of velocities and energy in ideal gas – Equipartition of energy – Vibrational, rotational, and electronic partition functions for diatomic gas – specific heats of gas – Ortho and para hydrogen's – Bose Einstein & Fermi Dirac statistics – Bose Einstein gas and application to radiation – liquid helium – Free electrons in metals.

VI. Quantum Mechanics:

Shordinger's wave equation – Born interpretation of wave functions – Expectations values of dynamical variables – Ehrenfests' Theorem - Uncertainty Principle – Application of Shordinger's equation to (a) One dimensional squarewell potential (b) Simple harmonic Oscillator (c) Hydrogen atom.

Perturbation theory – First order and second order theories for non degenerate & degenerate systems – Application to normal helium atom – Time dependent & time independent perturbation theory – Application for each. Relativistic quantum mechanics – Klenn Garnian equation Dirac's equation Solution for a free particle meaning of negative energy states – Quantum theory of scattering – Born approximation.

VII. Electronics:

Vacuum: Tubes and semiconductor diodes – Principle and working of rectifier and power supply – Ripple factor L and T section filters voltage stabilisation in power supplies characteristics of triode and pentode and junction transistors their static characteristics – Voltage amplifiers – R.C. coupled amplifiers – and its frequency response Negative feed back in amplifiers – Advantages of – Ve feed back – condition for sinusoidal oscillations in transistor circuits Hartley and Colpitts oscillators – multi vibrators A stable – Monostable and bi-stable type – Pulse generator – Saw tooth voltage generator Cathode – ray oscilloscope (C.R.O).

VIII. Solid State Physics:

Crystallography – Classification of solids – Point group and space group – Crystal systems – Specification of planes and directions – Elements of X-ray diffraction – Various crystal bindings – Metallic, ionic, co-valent molecular and hydrogen bonded crystals – Band theory of solids – motion of electrons in periodic potential Block's theorem Kronig's penny model – energy bands – Brillouin zones – distinction between insulators – Metals and Semi-conductors on band theory.

IX. Nuclear Physics:

Radioactivity, Chain dis-integration, transient and secular equilibrium – Age of rocks and Radio carbon dating – alpha decay or Gamow's theory – Beta decay and neutrino Interaction of gamma rays with matter – Selection rules – nuclear models – Liquid drop model – semi empirical mass formula – criteria for stability against spontaneous decay – Shell model – nuclear detectors – Ionisation – Chambers – G.M. counters – Proportional counters – bubble and spark chambers – Semi-conductor detectors.

X. Spectroscopy:

Bohr – Sommerfield theory of Hydrogen atoms – Space quantisation – fine structure of spectral lines – Alkali spectra – Zeeman effect Vector atom model of one electron system – Paschen – Back effect – Stark effect in Hydrogen atoms – Band spectra – Types of band spectra-I.R. and Raman effect. Isotope effect – Franck – Candon Principle.

CHEMISTRY

Inorganic Chemistry:

1. Atomic structure & Chemical Bonding – Quantum theory Schrodinger – wave equation – Hydrogen atom, Hydrogen molecule – Elements on valence bond – molecular orbital theories.
2. Determination of molecular structure – X – ray and electron diffraction methods.
3. Periodic classification (Classical and modern) periodic functions of elements – atomic volume – atomic radius electronegativity-oxidation states – lattice energy and their applications.
4. Chemistry of d-block elements – Physical and chemical characteristics of the transition elements – Characteristics related to electronic arrangements oxidation states – color magnetic properties – Complex formation – interstitial L-S coupling – Hund's rule. A General study of the first transition series.
5. Chemistry of f-block elements – Lanthanons and Actinons – electronic configurations – oxidation's states – Separation of Lanthanons and Actinons.
6. Chemistry of complex compounds: Jorgenson and werner's views – effective atomic number – valence bond theory – Introductory treatment of crystalfield theory applied to complexes with coordination number 6.
7. Isomerism in complexes: Geometrical and optical isomerism of four and six co-ordinated complexes. Pearson's theory of hard and soft acids and bases.
8. Study of the following elements and their modern Chemistry Be, Ti, Zr, Hf, V, Mo, W, U, and Th.
9. Alloys: Intermetallic compounds.

Physical Chemistry:

10. Radio activity: Elementary account of nuclear structure natural and artificial radio activity – characterisation of relations – decay chains-half-life-decay constant and average life. Radio-active series, atomic transmutation – atomic fission and fusion reactions and their applications – nuclear isomers and their separations.
11. Kinetic theory of gases: Equations of state – critical constants – States of aggregation – liquid states – viscosity – physical properties and chemical constitution – collision theory of derivation of the collision – number from Kinetic theory of gases.
12. Chemical Kinetics: order and molecularity of reaction first order and second order reactions – law of mass action – influence of temperature and pressure – thermo-dynamic derivation of Law of mass action – unimolecular reactions Lindemann's theory.
13. Thermodynamics: First law of thermodynamics and its applications to ideal gases, energy and enthalpy changes in gases, heat capacities of gases and their inter-relation. Isothermal and adiabatic processes – Kirchoff's equation and its applications – Vant Hoff's isotherm isochore equilibria in heterogeneous system. Second Law of thermo dynamics (Joules and Joule Thomson experiments). Entropy change in an isolated system for reversible and irreversible processes – Variation on entropy of a system with temperature and pressure.

Organic Chemistry:

14. Heterocyclic compounds and chemistry of natural products – Importance of heterocyclic compounds – classification based on the nature of heterocetom, size of the ring and II excessive and II deficient nature of the ring.
A general and comparative study of Furan pyrrole and thiophene Ring transformations. General comparison with benzenoid compounds, pyridine, quinoline, Isoquinoline and acridine-III deficient nature of heterocyclic rings – case of nucleophilic substitution.
15. Methods of synthesis, reactivity and properties of the following polynuclear aromatic compounds: anthracene, Benzanthracene, Phenanthrene Chrysen and picene.
16. Benzopyrones : Coumarins and Chromones.
17. Alkaloids: General occurrence, reactions and degradations. Chemical and Physico-Chemical methods for the elucidation of structures-synthesis and structural elucidation of the following alkaloids – atropine – cocaine - quinine – Narcotine – papaverine.
18. Organic reaction mechanism: Structure and reactivity of organic molecules – Factors affecting Electron density in a band-inductive, inductive, mesomeric, (resonance) and electrometric effects, hyperconjugation – Dipole moments-acidic and basic strength of organic Compounds. Modern concepts of organic reaction mechanisms – Addition, substitution and elimination reactions – simple examples and their mechanism. The intermediate carbonium ion formation and its participation in organic reactions. Addition C-C, system-pinacol-pincolene rearrange rearrangements. Automatic substitution – Formation and hydrolysis of esters.
19. Some name reactions: Wurtz-Friedel-Crafts, Fries-Gattermann – Perin – Beckmann's rearrangements and Grignard reactions.
20. Carbohydrates: General reactions of monosaccharides – configurational studies on glucose, fructose, sucrose, Recent advances in the Chemistry of cellulose and starch.
21. Proteins – Introduction to proteins – their classification – Nomenclature and distribution in nature simple, amino acids – Isolation and their synthesis.
22. General Ideas regarding the chemistry of vitamins & Hormones nicotine, B-Carotene and Vitamin C.
23. Alicyclic compounds: Synthesis and reactions Bayers strain theory – Factors affecting stability of conformation – terpenes – citral – gerrniol – limonenene – terpinol – pinene and camphor.

24. Stereo Chemistry: Optical and geometric isomerism configuration of saturated molecules – DL and RS configuration of optically active compound-racemic – mixtures – racemisation and resolution.
25. Molecular spectra: NMR, Chemical shift – Spin – Spin coupling – ESR of simple radicals – Rotational Spectra, diatomic molecules, linear triatomic molecules, isotopic substitution – Vibrational and Raman Spectra.

Physical Chemistry:

26. Electro-Chemistry: Equivalent conductance and its measurement. The independent migration of ions – Kohlrausch's Law. Transport number and their determination. Ionic mobilities. Equivalent conductance of weak and strong electrolytes. Inter-ionic attraction theory treated quantitatively-Debye-Huckel-Onsager equation. Determination of solubilities from conductance measurements – Conductometric titrations.
Ionic product of water and its determination from conductance and EMF methods – theories of acids and bases – Hydrogen ion concentration and its measurements from E.M.F. measurements using Hydrogen quin – hydrogen and glass electrodes – Buffer solutions – Henderson's equation potentiometric titrations – Determinations of equilibrium constant and solubilities from E.M.F. measurements – Gibbs – Helmholtz equation and its application to chemical cells.
27. Photo – Chemistry: Laws on absorption of light – Griess – Draper Laws – Einstein's Law in Chain reactions – Hydrogen chlorine reactions – absorption – Laws of absorption.
28. Surface Chemistry and catalysis – Absorption isotherms, surface area determination, heterogeneous catalysis, acid-base and enzyme catalysis.

BOTANY

I. Bacteria and Viruses:

1. General Account of viruses. Definition, Characterisation, Chemistry, Ultrastructure, Composition, replication, Bacteriophages, transmission of plant viruses, Importance.
2. General account of bacteria – Characteristics, shape, ultrastructure of the cell, nutrition, reproduction, classification and importance.

II. Plant Pathology:

1. Disease symptoms produced by Bacteria, Fungi, and Viruses.
2. A general account of important diseases of crop plants and their control:

a) Late blight of potato	f) Leaf spot of rice.
b) Smuts (Wheat, Jowar)	g) Citrus cancer
c) Rust of wheat	h) Bacterial blight of paddy.
d) Leaf spot of groundnut.	i) Angular leaf spot of cotton.
e) Paddy blast.	j) Mosaic of Tobacco.
3. Mycoplasma.
4. Control of plant diseases (A general account)

III. Algae (Phycology)

1. Introduction and general classification of Algae.
2. Criteria for the classification.
3. Thallus organization in Algae.
4. Economic importance of Algae.
5. General characters, structure, Reproduction, pigments, phylogeny, life cycles etc., of main groups in Algae with reference to Genera Given:
 - (a) Cyanophyceae (Nostoc, Scytonema, Oscillatoria).
 - (b) Chlorophyceae (Chlamydomonas, Volvox, Cladophora, Oedogonium, Coleochaete, Chara).
 - (c) Bacillariophyceae – General Account.
 - (d) Xanthophyceae – [Vautheria]
 - (e) Phaeophyceae (Ectocarpus, Laminaria)
 - (f) Rhodophyceae (Polysiphonia, Gracillaria)

IV. Fungi (Mycology):

1. General Characters of fungi. Occurrence and thallus structure of fungi. Nutritional aspects of Fungi (Saprophytism, parasitism, Symbiosis). Modes of reproduction (Sexual and Asexual). Life cycle in fungi. Criteria for classification of fungi. Classificatory systems.
2. General characters, morphology, reproduction, phylogeny, affinities etc., of the following : main groups with special reference to Genera given below:
 - a) Myxomycetes (slime molds).
 - b) Plasmodiophoromycetes (Plasmodiophora).
 - c) Mastigomycotina (Saprolegnia, Phytophthora).
 - d) Zygomycotina (Mucor).
 - e) Ascomycotina (Taphrina, Eurotium, Erysiphe, Pleospora, Neurospora).
 - f) Basidiomycotina (Puccinia, Agaricus).
 - g) Deuteromycotina (Cercospora, Colletotrichum, Phoma).
3. Economic importance of Fungi.

V. Bryophyta:

1. General characters of Bryophyta.
2. Sporophyte evolution in Bryophytes.
3. Classification of Bryophytes.
4. General account of the following main groups.
 - a) Hepaticopsida, (b) Anthocerotopsida, (c) Bryopsida.
5. Structure, reproduction and systematics of the following genera:
 - a) Marchantia, (b) Anthoceros, (c) Sphagnum (d) Funaria.

VI. Pteridophyta:

1. General characters of pteridophytes.
2. Classification of pteridophytes.
3. General characters of the following main groups:
 - a) Psilopsida; b) Lycopsidea; c) Sphenopsida (Eusporangiate and Leptosporangiate):
4. Morphology, anatomy, reproduction and affinities of the following genera:
 - a) Psilotum; b) Lycopodium; c) Selaginella; d) Ophioglossum; e) Marsilea; f) Pteris.

VII. Palaeobotany:

1. Fossil pteridophytes .
2. Origin and evolution of land plants.
3. Homospory, Heterospory and Origin of Seed.
4. Telome theory and origin of sporophyte.
5. General account of the following fossil Gymnosperms.
 - a) Pteridosperms; b) Bennittitales; c) Cordaitales; d) Pentoxylales.

VIII. Gymnosperms:

1. Gymnosperms.
2. Comparative account of morphology, life history, Affinities etc. of the following:
 - a) Cycadophyta – Cycas, Zarnia,
 - b) Coniferophyta – Pinus.
 - c) Ginkgophyta – Gintgo.
 - d) Chlamydospermatophyta : Ephedra, Welwetschia, Gnetum.
3. Classification of Gymnosperms.

IX. Taxonomy of Angiosperms:

1. Systems of classification: - Hutchinson, Takhtajan, Bessey, Engler and Prantl, Bentham and Hooker.
2. Principles of taxonomy:- Criteria of classification, categories of classification, Diversity of Phyletic concepts.
3. International code of Botanical nomenclature, principles, Typification, Citation and authority.
4. Recent trends in Taxonomy:
 - a) Biosystematics; b) Chemataxonomy; c) Serodiagnostic test and classification,
 - d) Numerical taxonomy.
5. Study of the following families with reference to their characteristics, economic importance, attributes etc.,

a) Ranunculaceae,	e) Malvaceae,	i) Apocynaceae,	m) Solanaceae,
b) Caryophyllaceae,	f) Tiliaceae,	j) Asclepiadaceae,	n) Euphorbiaceae,
c) Sterculiaceae,	g) Rubiaceae,	k) Boraginaceae,	o) Poaceae.
d) Sapotaceae,	h) Compositae,	l) Convolvulaceae,	

X. Anatomy and Cell Biology:

1. Ultra structure of the cell and cell organelles along with their functions.
2. Cell wall structure.
3. Tissue and Tissue systems.
4. Meristems – Shoot and root apices.
5. Normal and anomalous Secondary growth.

XI. Embryology:

1. Concept of primitive flower.
2. Development of anther and ovule.
3. General account of Embryosac and types of Embryo.
4. Fertilization.
5. Endosperm morphology and types.
6. Polyembryony and apomixis.

XII. Cytology, Genetics and Evolution:

1. Mitosis and Meiosis.
2. Chromosome (Morphology, Structures importance etc.).
3. Concept of gene, laws of inheritance gene action.
4. Genetic code.
5. Linkage and crossing over.
6. Parasexuality.
7. General account of Mutations
8. Polyploidy and its role in crop improvement.
9. Origin of life.

XII. Ecology and Phytogeography :

1. Ecosystem: - Concept, biotic and abiotic components, ecological pyramids, productivity.
2. Geo-chemical cycles.
(Carbon, Nitrogen, Sulphur, Phosphorous cycles).
3. Plant succession – Xerosere and Hydrosere.
4. Floristic regions of the world.
5. Floristic zones of India.

XIV. Physiology:

1. Absorption and translocation of water.
2. Transpiration and stomatal behaviour.
3. Absorption and uptake of Ions, Donnan's equilibrium.
4. Role of micronutrients in plant growth.
5. Translocation of solutes.
6. Respiration (Glycolysis, pentose phosphate shunt, structure and role of mitochondria, Krebs cycle, Oxidative phosphorylation, Photorespiration, Respiratory quotient, Fermentation, Pasteur effect Factors affecting).
7. Photosynthesis: - light and dark reaction, Red drop, Emerson effect, Two pigment systems, Mechanism of Hydrogen transfer, Calvin cycle, Enzymes of CO₂ reduction, Hatch a slack cycle C₄ cycle, CAM Pathway, Factors affecting photosynthesis, Pigments.
8. The enzymes: Nomenclature and classification, structure and composition, Mode of enzyme action, Factors affecting.
9. Nitroge, Metabolism and bio, synthesis of proteins Nitrogen fixation, Nitrogen cycle, (Physical and biological) Nitrogen assimilation Amino acid, metabolism, Biosynthesis of proteins.
10. Plant hormones Auxins, Gibberellins, Cytokinins, Abscissic acid (General account).

XV. Economic Botany:

1. Cultivation, economic importance, systematic position and morphology of the following plants.

(a) Rice	(e) Sugarcane	(l) Coffee	(m) Rauwolfia
(b) Wheat	(f) Groundnut	(j) Tea	(n) Pigeon pea
(c) Jowar	(g) Sun flower	(k) Jute	(o) Pearl millet.
(d) Cotton	(h) Castor	(l) Cardamom	

XVI. Recent Aspects of Botany:

1. Modern techniques

a) Electron microscopy,	e) Electrophoresis
b) Phase contrast microscopy	f) The tracer technique
c) Spectro photometry	g) Auto radiography
d) Chromatography	h) Sero-diagnostic methods.
2. Genetic engineering.
3. Plant tissue culture.
4. Alternative sources of Energy.
5. Social forestry.
6. Microorganisms as tools in understanding biological systems.
7. Environmental pollution (Water, soil, air) health hazards and control.

ZOOLOGY

Non-chordata and Chordata:

Non-Chordata:

1. Protozoa-Classification of protozoa (Honigberg), Locomotion in Protozoa, Nutrition in protozoa, Reproduction in protozoa, Diseases of Protozoa, Economic importance of Protozoa.
2. Porifera: Canal system in porifera, skeleton in porifera, Reproduction in sponges.
3. Coelenterata : Polymorphism in coelenteratas, Metagenesis coral formation, etenophora.
4. Helminths: Common Helminthic parasites of Man – Taenia solium, Schistosoma sp., Ascaris, Ancylostoma, Oxyuris Loa, Trichinella, Strongyloides – their life cycles, Parasitism.
5. Annelida: Excretory system in Annelida, Coelome formation.
6. Arthropoda: Mouthparts of Insects, crustacean larvae, parasitism in crustacea, useful and harmful insects, Metamorphosis in insects. Apiculture and sericulture in India.
7. Mollusca: Respiration in Mollusca, Torsion and Detorsion, pearl formation and Pearl industry.
8. Echinodermata: Echinoderm larvae.

CHORDATA:

Origin of Chordata, phylogeny and affinities of Hemichordata Retrogressive metamorphosis, Comparative account of Respiratory, Circulatory, Excretory and Reproductive systems of Vertebrates. Pisciculture in India, Common edible fishes of A.P., Origin and classification of Amphibia, Paedogenesis.

Temporal fossae in Reptilia, Important snakes of India, Dinosaurs.

Adaptations of flight in birds, Migration of birds. Poultry in India.

Adaptive radiation in Mammals, Aquatic Mammals, useful Mammals, Dentition in Mammals. Evolution of placentalia.

Cell Biology Genetics, Physiology, Evolution, Embryology, Histology, Ecology.

Cell Biology: Ultra structure of the Cell-Plasma membrane – Mitochondria, Golgibodies, Nucleus, Endoplasmic reticulum, ribosomes. Chromosomes and their fine structure. Mitosis and meiosis-D.N.A. & R.N.A. and genic code, Protein synthesis.

Genetics: Mendel's law of inheritance – Critical review. Linkage, crossing over, Sex linked inheritance, Mutations, Inborn errors of Metabolism, Human genetics.

Physiology: Vitamins; Enzymes; Carbohydrate, protein and lipid metabolism; Osmoregulation, Thermoregulation; Excretion in Vertebrates; Muscle contraction; Nerve Impulse; vertebrate hormones and Mammalian reproduction.

Evolution: Origin of life – Modern concepts, theories of Evolution, Isolation, Speciation, Natural Selection, Hardy weinberg" Law, Population genetics and evolution, Adaptations, Evolution of Man. Zoogeographical realms of the world.

Embryology: Cleavage patterns; Gastrulation and its significance in development of vertebrates; Formation and functions of Foetal membranes, Types of placenta, organisers, Regeneration, genetic control of development organogenesis of central nervous system, sense organs, heart and kidney of vertebrate embryos.

Histology: Histology of Mammalian tissues and organs – Epithelial, connective, blood, bone, cartilage, skin, stomach, intestine, liver, pancreas, kidney, Testis and ovary.

Ecology: Concept of Ecosystem, Biogeochemical cycles, influence of environmental factors on animals, energy flow in Ecosystem, food chains & Tropic levels, community ecology. Ecological Succession, Environmental Pollution – Air, water, land, Noise, Radioactive, thermal and Visual, Effects of Pollution on ecosystem, Prevention of Pollution.

Wild life in India – Conservation.

Man & Biosphere Programme – Chipko movement.

HISTORY

Ancient India:

1. Harappan Civilisation -- Extent, major cities, Characteristic features, social and economic conditions, script, religious practices, causes for the decline.
2. Vedic Age: Importance of Vedic literature, political, social and economic conditions in the early and later vedic age.
3. India in the 6th Century B.C.: Social and economic conditions, Rise and spread of Jainism and Buddhism.
4. Mauryan Age: political history of the Mauryans, Ashoka, Mauryan Administration, Social and economic conditions, decline of the Mauryan empire.
5. The Satavahanas: political history, administration, contribution to the culture.
6. Gupta period: Political history, administration, social and economic conditions, growth of culture, decline of the empire.
7. India in the 7th Century A.D.: Harsha Vardhana, Pallavas and Chalukyas, their political history and their contribution to culture.

Medieval India:

8. India between 650 and 1200 A.D. -- political, Social and economic conditions, Chola administration and culture, Sankaracharya.
9. Age of the Delhi Sultanate: (1206-1526), Military and Administrative organisation. Changes in Society and economy, Bhakti movement.
10. The Vijayanagar Empire: Origin, History, Krishnadevaraya, Social and economic conditions, growth of culture, decline.
11. Mughal Age (1556-1707): political history, Akbar, Administration, Social and Economic conditions, culture, decline of the Mughal empire, Maharattas and Shivaji.

Modern India (1757-1947):

12. Historical forces and factors which led to the establishment of the British power in India - Early resistance to the British power in India - Hyder Ali, Tipu Sultan, causes for their failure.
13. Evolution of British paramountcy in India: Policies of Wellesley and Dalhousie.
14. Socio-religious reform movements Rajaram Mohan Roy, Dayananda Saraswati and others.
15. Revolt of 1857: Causes, results, significance.
16. Rise and growth of the Indian National Movement: Birth of the Indian National Congress, the national movement from 1885 to 1905; movement from 1905 to 1920. Role of Tilak and Annie Besant; The movement from 1920 to 1947; Emergence of Gandhi; Non-cooperation movement, Salt Satyagraha and the Quit India Movement.
Freedom movement in Andhra Pradesh with special reference to the role of Alluri Sitharama Raju and Tanguturi Prakasam, Revolt against the Nizam's rule in Telangana.

Modern world:

17. Industrial Revolution - Significance and results.
18. American war of Independence courses, significance and results.
19. French Revolution - Courses, significance and effects.
20. National Liberation movements in Italy and Germany in the 19th Century - Mazzini, Cavour, Garibaldi, Bismark.
21. I World War - Causes and effects.
22. The Russian Revolution of 1917 - Causes, importance and results.
23. The World between the two world wars - Nazism in Germany, Fascism in Italy. Turkey under Mustafa Kamal Pasha
24. Developments in China 1911-1949 – Nationalist Revolution of 1911 – Communist Revolution of 1948
25. II World War -- Causes and effects.

POLITICAL SCIENCE

- 1, State: Theories of origin of State. Rights and Duties, Law, Liberty and Equality. Nation & Nationality – Forms of Government Press – Pressure Groups and parties
2. Ideologies: Utilitarianism – Individualism – Idealism. Theories of Socialism – Gandhian philosophy
3. Theories of Decision making – Behaviouralism – System Theory, Elite Theory – Structural functional decision-making and Game Theory.
4. Nature of Indian Constitution – Fundamental Rights – Directive Principles of state policy legislature – Executive and Judiciary – Judicial Review – Centre-State relations – Problems of National Integration.
5. United Nations and Collective Security – Concept of power in International Relations – Balance of Power, Cold-wars détente. Arms Control and Disarmament.
6. Problems of Third World. New Colonialism – Non-alignment India's role in world affairs.

PUBLIC ADMINISTRATION

1. Meaning and scope of Public Administration – Its relations with other Social Sciences – The Art and Science of Public Administration
2. Theories of Administration – Classical, Human Relations, Ecological, Systems approach – Decision-making
3. Concept of Development - Administration and Comparative Administration
4. Concept of Administration: Hierarchy, Span of Control, Co-ordination, Unity of Command, Centralisation and Decentralisation, Authority and responsibility, Formal and Informal Organisation, Decision making, Leadership, Administrative Planning, Communication, Work motivation, Management Information system.
5. Types of Organisation: Departments, Corporations, Independent Regulatory Commissions.
6. Administrative adjudications, Delegated Legislation
7. Controls over Administration – Legislative, Executive, Judicial
8. Personnel Administration – Recruitment, Promotion, All India Services, Political Rights of Civil Servants – Right to strike – Negotiating Machinery – Generalist versus Specialisits – Controversy, Citizens Grievances – Lok Ayukta and Lokpal; the A.P. Administrative Tribunal.
9. Financial Administration – Principles of Budgeting, Performance Budgeting, PPBS, Budgeting in India, Organisation and Role of Finance Ministry
10. Centre- State and State-Local Relations in India
11. Planning in India – Planning Commission, Planning Process at National and State levels – Concept of Block Planning
12. State Administration – Organisation, Secretariat, Minister – Civil Servant relations – Directorates – Boards of Revenue, Functional Commissioners, Regional Administration, Divisional Commissioners, District Administration
13. Local Government; Theories of Local Government – Organisation, Process, Functions and working of Panchayat Raj Institutions in Andhra Pradesh, Municipal Administration in Andhra Pradesh; Urban Development Authorities; Official – Non-Official relations in local Government relations.

GEOGRAPHY

PAPER-I:

Section-A -Map Work: Map Location – India/World:

- i. Mountains, Plateaus and Plains, Isotherms, Isohyets
- ii. Rivers
- iii. Vegetation types and forests
- iv. Wild Life sanctuaries
- v. Industrial towns
- vi. Mining Centres
- vii. Tourist Centres
- viii. Ports, Harbours and Airports
- ix. Important Road, Railway and Sea routes
- x. Capital Cities
- xi. Seas, Islands and Peninsulas
- xii. Ocean currents

Section-B: Principles of Physical Geography:

Geomorphology: Origin and evolution of the earth, earth movements continental Drift Theory, Plate Tectonics, Isostasy, Major land forms, Endogenetic and Exogenetic forces – Earth quakes and volcanism, Weathering and erosion, Concept of Cycle of erosion – Davis and Penck, Arid, Fluvial, Glacial, Karst and Marine landforms, Rejuvenated and poly cyclic landforms.

Climatology: Structure and composition of the atmosphere, Temperature, Humidity, precipitation, pressure and winds. Jetstreams, Heat balance, Airmasses and fronts, Tropical and Temperate cyclones, climatic classifications – Koppen and Thornthwaite, Hydrological cycle.

Oceanography: Movements of Ocean Water – Tides and Ocean currents, Hypsographic Curve, Salinity, Coral reefs, Ocean deposits, Marine resources.

Soils, Vegetation & Eco-System: Soils – Types and world distribution, Major biotic regions of the world – Savanna and Monsoon biomes, concept of Ecosystem – interrelations and energy flows, Man's impact on ecosystem.

PAPER-II:

Human and Economic Geography:

1. Development of Geographical thought, Dualism in Geography – Determinism and possibilism, Quantitative and Behavioural revolution in geography.
2. Population – Growth and Distribution, Major Cultural Realms of the world, Population movements – factors and consequences with reference to India.
3. Settlements – Rural and Urban, Central Place Theory, Rank-size Rule, Primate City, Urban Growth Theories, Morphology of Indian Cities, Rural – Urban Fringe, Urbanisation in India and Andhra Pradesh.
4. Concept of Heartland and Rimland, Geopolities of Indian Ocean Region, Major International Trade Routes, Transportation in India – Roads and Railways.
5. Theory of Agricultural Location, Typology and World Agricultural Regions, Agricultural Efficiency and crop combination, Major agricultural regions of the world with reference to India, Green Revolution in India.
6. Theories of Industrial Location, Major industrial regions of the world factors influencing the location and growth of Cotton-Textiles, Sugar, Cement, Iron & Steel Industry in India.
7. World distributions of the resources – Coal, Petroleum and Forest, Resource Utilisation – Conservation of resources – Land, Water, Mineral, Forest and Energy, Major Power and Irrigation Projects in Andhra Pradesh.
8. Regional disparities – Identification of flood and drought prone areas in India, Regional Planning in Andhra Pradesh.

PHILOSOPHY

PAPER – I

SECTION - A – WESTERN

1. Plato: Theory of knowledge. Doctrine of Ideas.
2. Aristotle: Form, matter and causation.
3. Descartes: Cartesian method and certain knowledge Mind-Body problem: God:
4. Spinoza: Substance, Attributes and modes, Pantheism.
5. Leibnitz: Monads: Theory of perception: God.
6. Locke: Theory of knowledge: Rejection of innate ideas: Substance and qualities.
7. Berkeley: Criticism of Abstract ideas: Criticism of substance and attributes–God.
8. Hume: Theory of knowledge: Scepticism: Self and causality.
9. Kant: Transcendental Aesthetics, Transcendental Logic Space & Time, metaphysics.
10. Hegel: Dialectical method: Absolute idealism.
11. Logical Atomism: Atomic Facts: Atomic sentences, Logical constructions and incomplete symbols – (Russell). Distinction of saying and showing (Wittgenstein).
12. Logical positivism: Verification of theory and rejection of metaphysics: Linguistic theory of Necessary propositions.
13. Phenomenology – Husserl.
14. Existentialism: - Kierkgaard: Sartre.

SECTION - B – INDIAN

1. Charvaka:- Theory of knowledge: Materialism.
2. Jainism:- Theory of Reality: Saptabhangi. Naya Bondage and liberation.
3. Buddhism:- The Four Noble Truths – Philosophical implications of Buddhas ethical teaching.
4. Samkhya:- Prakriti: Purusha: Theory of causation.
5. Yoga:- Yoga Psychology – Eight limbs of yoga.
6. Nyaya:- Vaisheshika – theory of pramana, liberation, Proofs for the existence of God, categories: theory of causation: Atomic theory of creation.
7. Mimamsa:- Theory of knowledge.
8. Vedanta:- Schools of Vedanta: Sankara, Ramanuja, Madhva (Brahman: Ishwara:Atman: Jiva: Jagat: Maya: Avidya: Adhyasa: Moksha).
9. Vivekanda:- Practical Vedanta: Universal Religion.
10. Mahatma Gandhi:- Concept of Non-violence, Satyagraha – Ends and Means.
11. Sri Aurobindo:- Nature of Reality: Satchidananda: Supermind: Cosmic evolution: Integral yoga:
12. Radhakrishna:- His idealistic views, its difference from classical vendanta.

PAPER – II

SECTION - A – ETHICS

1. The conception of Good, Right and their relation.
2. Psychological Hedonism.
3. Utilitarianism (Bentham and J.S. Mill)
4. Kantian Ethics.
5. Moral Judgements: Descriptivism: Prescriptivism: Emotivism:
6. Nishkama Karma: Sthitaprajna.
7. Jaina Ethics: Anuvratas and Mahavratas.
8. The Budhist conception of Mahakaruna.

SECTION – B – LOGIC

1. Laws of thought.
2. Logical division and definition.
3. Classification of propositions: Traditional and modern.
4. Syllogism: Figures and moods, Rules of Syllogism (General and Specific) – Formal Fallacies.
5. Rules of Quantification:

SECTION – C- Philosophy of Religion

1. Nature and scope of philosophy of Religion.
2. Proofs for the existence of God and their Criticism.
3. Immortality of soul.
4. Moksha – Paths Leading to Moksha.
5. Religious Knowledge – Reason: Revelation and Mysticism.
6. Religion and morality.

SECTION – D : Socio- Political Philosophy

1. Political Ideal: Equality, Justice: Liberty.
2. Sovereignty: Austin: Bodin, Laski, Kautilya
3. Individual and state.
4. Democracy: Concept and forms:
5. Socialism and Marxism.
6. Humanism.
7. Secularism
8. Theories of punishment.
9. Co-existence and violence: Sarvodaya.
10. Gender – Equality.
11. Scientific temper and progress.
12. Philosophy of Ecology.

SOCIOLOGY

PAPER – I – General Sociology

1. **Scientific Study of Social Phenomena:** The emergence of Sociology and its relationship with other Social Sciences. Sociology as a Science; Science and Social behaviour; the problem of objectivity; the scientific method and design of Sociological Research; techniques of data collection and measurement including participant and non-participant observation, interview schedules and questionnaires and measurement of attitudes. Sampling, Reliability and validity.
2. **Pioneering contributions to Sociology:** The seminal ideas of Durkheim, Weber, Radcliffe Brown, Malinowski, Parsons, Merton and Marx.
 - a) Durkheim: Division of labour, Social fact, religion and society.
 - b) Max Weber: Social action, types of authority, Bureaucracy, Protestant ethic and the spirit of capitalism, ideal types, Social action.
 - c) Karl Marx: Historical materialism, mode of production, alienation and class struggle.
 - d) Tarcott Parson: Social system and pattern variables.
 - e) Robert K. Merton: Latent and manifest functions, anomie, Conformity and deviance, reference groups.
3. **The individual and society:** Individual behaviour, Social interaction, society and social groups, Social system, Status and role; culture, personality and socialization and social control, role conflict.
4. **Social Stratification and Mobility:** Social differentiation and stratification, Attributes of social stratification, theories of stratification, different conceptions of class and caste; Class and Society, types of mobility, intergenerational mobility, Intra generational mobility, Horizontal mobility, open and closed models of mobility.
5. **Family, Marriage and Kinship:** Structure and functions of family; structural principles of kinship, family and descent. Types and forms of marriage Change in marriage and family, marriage and divorce.
6. **Formal organizations:** Elements of formal and informal structures; bureaucracy, modes of participation – democratic and authoritarian forms; voluntary associations.
7. **Economic System:** Concepts of property; social dimensions of division of labour and types of exchange; social aspects of pre-industrial and industrial economic system; Industrialization and change; Changes in the spheres of familial, educational, religious, political and stratificational, Social determinants and consequences of economic development
8. **Political System:** The nature of Social power – Community power structure, power of the elite, class power, organizational power, power of unorganized masses, power, authority and legitimacy, power in democracy and in totalitarian Society; Political parties and voting behaviour; Democratic and authoritarian modes of Political Participation.
9. **Educational System:** Social origins of students and teachers, Stratification and education, equality of educational opportunity, Social aspects of mass education, Problems of Universalization of primary education; role of community and state intervention in education, education as a medium of cultural reproduction, Indoctrination, education and modernization, education and social control, education and social change.
10. **Religion:** Origins of religious beliefs in premodern Societies, the sacred and the profane; social functions and dysfunctions of religion. Religion, magic and science, Monistic and pluralistic religion, organized and unorganized religions and changes in religion; concept of secularization.
11. **Social change and Development:** Social structure and social change. Continuity and change as fact and as value. Processes of change, Factors of Social change, Theories of change; types of Social change, Social disorganization and social movement; Types of social movements, Social movement and change, Social policy and social development.

PAPER – II : SOCIETY OF INDIA

1. **Historical Foundations of the Indian Society:** Traditional Hindu Social organization, Socio-cultural dynamics through the ages, especially the impact of Buddhism, Islam and modern West; factors in continuity and change.
2. **Social stratification:** Caste system and its transformation aspects of ritual, economic and caste status; cultural and structural views about caste, mobility in caste, issues of equality and social justice, caste among the Hindus and non-Hindus; casteism, the Backward Classes and the Scheduled Castes; untouchability and its eradication; agrarian and industrial class structure.
3. **Family, marriage and Kinship:** Religious variations in kinship system and its socio-cultural correlates; changing aspects of Kinship; The Joint family-its structural and functional aspects and its changing form and disorganization; Marriage among different ethnic groups and economic categories, its changing trend and its future; impact of legislation and socio-economic change upon family and Marriage; intergenerational gap and youth unrest; changing status of women.
4. **Economic System:** The Jajmani System and its bearing on the traditional society; market economy and its social consequences; Occupational diversification and social structure; professions, Trade Unions; Social determinants and consequences of economic development; economic inequalities; exploitation and corruption.

5. **Political System:** The functioning of the democratic political system in a traditional society; Political parties and their social composition; Social structural origins of political elites and their social orientations, decentralization of power and political participation. Panchayat Raj and Nagarpalikas and 73rd and 74th Constitutional amendments.
6. **Educational System:** Education and society in the traditional and in the modern contexts; Sociological factors for educational inequality; Education and social mobility; Educational problems of women, the Backward Classes, Scheduled Castes and Scheduled Tribes. Directive principles of State policy and Primary education, Total literacy campaigns.
7. **Religion:** Demographic dimensions, geographical distribution; and neighbourhood living pattern of major religious categories; interreligious interaction and its manifestation in the problems of conversion; Minority status and communal tensions; secularism; Tribal Societies and their integration; distinctive features of Tribal communities; Tribe and Caste; acculturation and integration.
8. **Rural social system and community development;** Socio-Cultural dimensions of the village community; Traditional Power structure, democratization and leadership, poverty, indebtedness and bonded labour, social consequences of land reforms. Community Development programmes and other planned development projects; Green Revolution; new strategies; to rural development.
9. **Urban social organisation:** Continuity and change in the traditional bases of social organisation namely family, marriage, kinship, caste and religions in the urban context; stratification and mobility in urban communities; ethnic diversity and community integration; urban neighbourhoods, rural-urban differences in demographic and socio-cultural characteristics and their social consequences. Urbanization in India, Urban environment, housing, slums and unemployment, programmes for urban development.
10. **Population Dynamics:** Socio-cultural aspects of sex and Age structure; Marital status, fertility and mortality: the problems of population explosion; Socio-psychological, cultural and economic factors in the adoption of family planning practices
11. **Social change and modernization:** Problem of role conflict, youth unrest – intergenerational gap-changing status of women. Major sources of social change and Resistance to change; Impact of West, reform movements; social movements; industrialization and urbanization; pressure groups, factors of planned change – Five year plans, legislative and executive measures; process of change; sanskritization, Westernization and modernization – Means of Modernization, Mass media and education; problems of change and modernization – structural contradictions and breakdowns; current social Evils – Corruption and Nepotism, smuggling – Black money.

PSYCHOLOGY

PAPER-I

1. Scientific approach to Psychology.
 Roots of modern psychology
 Impact of other sciences on the development of psychology
2. Nature of psychological research:
 Methods of psychological research – Observational method Survey methods – questionnaire and interview.
 Case history method
 Experimental method.
 Advantages and limitations of various methods.
3. Origin and development of behaviour:
 Genes and their role
 Constitutional and endocrinal functions
 Early childhood experiences and their impact on development
 The concept of maturation
 The characteristics of the developmental processes
 Experimental studies on the role of heredity and environment
 Nature-nurture controversy
 The role of social and cultural factors in the process of development.
4. Cognitive processes:
 Perception
 Organic basis of the perceptual process
 Psychophysical laws
 Gestalt Theory of perception
 Perceptual constancies
 Perceptual abnormalities
 Perceptual defence
 Effect of need on perception, perception and personality.
5. Learning:
 Thorndike's laws of learning
 Classical and instrumental conditioning
 Skinner's concept of reinforcement
 Hull's drive reduction theory
 Cognitive theories of learning – Tolman and Razran
 Gestalt approach to learning
 Programmed learning
6. Memory:
 Measurement of memory
 Early experiments – Ebbinghaus
 Short – term memory and long – term memory Forgetting
 Methods of improving memory.
7. Thinking:
 Language and thought
 Convergent and divergent thinking
 Concept formation
 Problem solving
 Theories of the development of thinking in children.
8. Intelligence:
 Binet's contribution
 Theories of intelligence
 Measurement of intelligence
 Intelligence tests
 Aptitude and its measurement
 The concept of social intelligence.
9. Motivation:
 Motivation – need, drive
 Theories of motivation – psychoanalytical theory, need hierarchy theory.
 Level of aspiration and achievement motivation.

10. Personality:
 - The concept of personality
 - Trait and type approaches
 - Factorial and dimensional approaches
 - Theories of personality – Field, Allport, Cattell, Lewin
 - Social learning theories
 - The Indian approach to the study of personality
 - The concept of Gunas
 - Measurement of personality
 - The role of projective tests.
11. Attitudes and values:
 - Formation of attitudes
 - Theories of attitudes
 - Theories of attitude change
 - Attitude scales
 - Values
 - Motivational Properties of values.
12. Recent trends:
 - Psychology and the computer
 - Cybernetic model of behaviour
 - Simulation studies in psychology
 - Altered states of consciousness – sleep, dream, meditation, hypnotic trance, drug induced changes
 - Sensory deprivation.
 - Human problems in aviation and in space flight.
13. Models of man:
 - The mechanical man
 - The organic man
 - The organizational man
 - The Humanistic man
 - An integrated model of man.

PAPER – II

1. Individual differences:
 - Types of psychological tests. Construction of psychological tests. Requirements of a good psychological test. Limitations of psychological tests.
2. Psychological Adjustment:
 - The concept of adjustment. Barriers to adjustment.
 - Reactions to adjustment
 - Defence mechanisms
 - The concept of mental health
 - Community mental health.
3. Psychological disorder:
 - Classification of disorders
 - Neurotic, psychotic and psycho physiological disorders
 - Psychopathic personality
 - The problems of anxiety, depression and stress.
4. Therapeutic approaches:
 - Psychoanalytic
 - Behaviour therapy
 - Client-centered therapy
 - Cognitive therapy
 - Rational-emotive therapy
 - Group therapy.
5. Application of psychology to industrial and organizational problems:
 - Personnel selection
 - Training and training methods
 - Theories of work motivation
 - Job designing
 - Man-machine systems
 - Leadership and its training.

6. Small groups:
Properties of group
Groups at work
Group cohesiveness
Interaction process analysis
Interpersonal relations.
7. Social Change:
Characteristics of social change
Psychological basis of change
Planning for change
Change proneness
Resistance to change
Problems of change in the rural context.
8. School Psychology:
The learner
School as an agent of socialization. Problems relating to adolescents in learning
Gifted children
Creativity
Retarded children and problems related to their training.
9. Disadvantaged Groups:
Types of disadvantages – Social, cultural and economic
Psychological consequences of disadvantage
Deprivation
Educating the disadvantaged groups
Problems of motivating the disadvantaged.
10. Social integration:
Prejudice its nature and manifestation
Ethnic prejudice
Ameolioration of prejudice
Social tensions – their causes and consequences
Reducing social tensions
Strategies to achieve social integration
National character.
11. Psychology and Economic development:
Identification and promotion of entrepreneurship
Technological change and its impact on human behaviour.
12. Management of information and Communication:
Psychological factors information management
Information overload
Psychological basis of effective communication
Mass media and its role in social change
Impact of television
Psychological basis of effective advertisement.
13. Problems of contemporary society:
Stress
Management of stress
Alcoholism
Drug addiction
Juvenile delinquency
Rehabilitation of the deviant
Aging and problems of the aged.