

# SYLLABUS FOR CIVIL SERVICE EXAMINATION (PRELIMINARY)

## 1. AGRICULTURE

Agriculture - its importance in National Economy, Factors determining agro-ecological zone and geographic distribution of crop plants.

Important crops of India, Cultural practices for cereal, pulses, oilseed, fibre, Sugar and Tuber crops and the scientific basis for these crop rotations. Multiple and relay cropping, Inter cropping and mixed cropping.

Soil as a medium of plant growth and its composition. Mineral and organic constituents of soil and their role in crop production. Chemical, Physical and Microbiological properties of the soils. Essential plant nutrients and their functions. Occurrence of cycling in soils. Principles of soil fertility and its evaluation for judicious fertilizer use organic manures and bio-fertilizers straight complex and mixed fertilizers manufactured and marketed in India.

Principles of Plant Physiology with reference to plant nutrition, absorption, translocation and metabolism of nutrients. Diagnosis of nutrient deficiencies and their amelioration. Photosynthesis and respiration. Growth and development. Auxins and hormones in plant growth.

Elements of Genetics and plant breeding as applied to improvement of crops. . Development of plant hybrid and composites. Important varieties, hybrids and composites of major crops.

Important fruit and vegetable crops of India, Package of practices and their scientific basis. crop rotations, intercropping and companion crops. role of fruits and vegetables in human nutrition, Post-harvest handling and processing of fruits and vegetables.

Serious pests and diseases affecting major crops. Principles of pest control. Integrated management of pests and diseases. Proper use and maintenance of plant protection equipments.

Principles of economics as applied to agriculture. role of agriculture in Indian Economy. Farm Planning and resource management for optimal production. Farming systems and their role in regional economics.

Philosophy, objectives and principles of extension. Extension organization at the State, District and block levels - their structure, functions and responsibilities. Methods of communication. Role of farm organizations in extension service.

## SERICULTURE

Introduction, present status of sericulture in the world, distribution of Sericulture in India Mulberry, Non-Mulberry and other sericigenous insects.

Different silkworm races, its classification, metamorphosis, Food plants of Silkworms, Mulberry production, Taxonomy of Mulberry with reference to the families pertaining to food plants of Silkworms.

Mulberry cultivation, techniques of seed production, propagation by cuttings, grafting layering, nursery requirements, Land preparation, manuring, role of organic and green manures, plating systems and methods, spacing and its importance, fertilizers,

irrigation', mulching, intercultivation, pruning, leaf harvest and preservation, chemical composition of mulberry leaf - Insect Pests and diseases of mulberry- Control measures.

Rearing Technology - rearing house, model rearing house, rearing equipments, disinfection, leaf quality, environmental factors for rearing, young silkworm rearing, characteristics and methods, co-operative rearing, chawki rearing centers, adult rearing, bed cleaning, spacing, their importance in silk worm rearing, care during moult, spinning, montages, harvesting of cocoons, categorization of cocoons and assessment, pests and diseases of Silkworm and preventive measures.

Seed technology - grainage activities, sex separation, pupa test, eclosion, oviposition, types of eggs, cocoon DFL ratio, artificial hatching methods and incubation of silkworm eggs.

Non-Mulberry silk-worm-types, rearing technology 'of tamar, eri, muga and oak-tasar varieties, Arboriculture, importance of primary and secondary food plants, interspecific hybridization.

Silk technology - marketing of cocoons, visual inspection, characteristics of cocoons, price fixation re-reeling, lacing skeining booking and bundling, raw silk properties; testing and grading spun silk industry, 'types of silk waste, silk throwing, weaving, knitting and processing, By'-products of silk industry.

## **AGRICULTURAL MARKETING AND CO-OPERATION**

Rural markets in India - Shandies, fairs etc., Regulation of markets, agricultural produce marketing Act and other relevant Acts. Functions of regulated markets, Market arrivals, arket hinterland, market yard and market committees. Role of regulated markets in marketing agricultural produce. Agencies involved in marketing of agricultural produce". Institutional and non institutional stages in marketing -.assembling, storage, transportation, processing, commission agency, wholesale and retailing - Relationships between different stages.

History of development of Co-operation in India. Governmental support for the development of co-operation, Co-operation through five year plans. Structure of Co-operatives in India and Karnataka. Three tier structure of Co-operatives, Primary D.C.C. banks and Apex Banks. Two tier structure of Co-operatives.

Capital and credit needs of agriculture. Sources of funds to agriculture - Money lenders, institutional agencies - Classification of agricultural credit - purpose, classification, time classification, self liquidating and non-self liquidating loans. Security for loans, hypothecation and mortgage.

## **2. ANIMAL HUSBANDRY, VETERINARY SCIENCES AND FISHERIES**

Note : Part - A is compulsory for all candidates. In addition to Part - A, each candidate shall choose either Part-B or Part-c.

### **PART - A**

Importance of livestock in Indian Agriculture, livestock farming and livestock product statistics, Indigenous and exotic cattle, buffaloes, sheep, goat,. pig and poultry breeds and their potential of milk, egg, meat and wool production. Basic nutrient requirements in cattle, pig and poultry. Elements of basic genetics - Mendels' law'of inheritance, post-Mendelian additions, Application of principles of genetics and breeding for improvement of animals.

Signs of health in animals; signs of estrus and estrus cycle in cattle, buffaloes, sheep, goat and pig. Milk and its components, methods of identification of adulteration of milk and milk products.

Characteristics of aquatic ecosystem. Types of water bodies marine, brackish water and fresh water. Major oceans of the world. Aquatic resources of India-seas, rivers, lakes, reservoirs: and ponds. Nutrients, organic production in water. Food chains, Aquatic pollution, sources and abatement.

Bacteria, yeasts and moulds - general characteristics' and nutrition. Marine bacteria - characteristics,- salinity, temperature and PH requirements. Freshwater bacteria - general characteristics, nutrition and growth. Food preservation - general characteristics, use of high and low temperature. Drying, salting, smoking, irradiation and use of preservatives. General principles underlying spoilage - fitness of food, causes of spoilage, numbers and kind of micro organisms and their growth.

## **PART - B**

Dairy farming in India - present and future status. Importance of Animal Husbandry in Indian agriculture. Production potential and breed characters of different exotic and Indian Livestock breeds of cattle, sheep, buffalo, goat, pig, poultry and rabbits. Elements of genetics and breeding as applied to improvement of animals.

Nutrition - Classification of feeds, feeding standards, computation of ration and mixing of rations, conservation of feeds and fodder. Housing and management of livestock. Maintenance of livestock records. Principles of hygienic production of livestock products, Artificial insemination, fertility and sterility in livestock. Principles of immunization and vaccination.

Description, symptoms, diagnosis and control of important infectious and metabolic diseases in livestock and poultry.

Important parasitic diseases in cattle, sheep, pig and poultry and their control.

Study of composition of milk, physical properties and food value. Quality, control of milk, common tests and legal standards. Organisation of dairy, processing of milk and milk distribution. Manufacture of milk products. Simple dairy operations. Micro organisms found in milk and dairy products. Diseases transmitted through milk to man.

Important meat borne diseases. Antimortem and postmortem examination.

## **PART - C**

Taxonomy and biology of commercially important fishes and crustaceans. Fishery biology - food and feeding habits, age, growth and reproduction. Migration, Major marine fisheries of India - sardines, mackerel, Bombay-duck, elasmobranchs, prawns, lobsters and molluscs. Fisheries of rivers, estuaries, reservoirs and brackishwater lakes. Important crafts and gears employed. Inland and coastal aquaculture. Criteria for selection of species. Selection of site for farm construction. Pond ecology, Nutrient cycle. Natural fish food organisms. Fertilisation. Formulation of supplementary feeds. Carp seed production; different types of hatcheries, seed transportation. Preparation and management of nursery, rearing and stocking ponds. Composite fish culture. Species of prawns for farming. Hatchery production of prawn seed. Nursery rearing. Preparation, stocking and management of production ponds.

Handling of fresh fish and methods of chilling-chilled sea water and refrigerated sea water preservation; icing. Proximate composition of finfish and shellfish proteins, fat, carbohydrates, vitamins and minerals; their content, . nature and estimation. Transportation of fresh fish. Spoilage of sea foods - factors responsible for spoilage, causative bacteria. Chemical changes caused by micro-organisms. Food plant sanitation - bacteriology of water supplies, swage and water treatment and disposal. Microbiology of fish products - ingredients, packaging materials, equipment and food handling, Microbiological Standards for food. Health of employees. Fish proteins -classification, structure, digestion and absorption. Fish fats and carbohydrates - biological importance, occurrence and classification. Enzymes- classification, characteristics; importance of fish muscles enzymes. Rigor mortis and its importance in processing. Fish products and by products from finfish and shellfish and their uses.

Fishing methods - trawling long lining, seining gillnetting and trap fishing. Aids for fishing -fish aggregating devices, electricity, sound, etc., Fish finding equipments. Fishing gear materials - natural and synthetic materials, their properties. Construction of net webbing types of mesh and webbing.

### 3. BOTONY

1. **Origin of Life** - Basic ideas on origin of earth and origin of life.
2. **Biological Evolution** - General account of biochemical and biological aspects of evolution Speciation.
3. **Cell Biology** - Cell structure function of organelles, mitosis, meiosis, significance of meiosis, Differentiation, senescence and death of cells.
4. **Tissue Systems** - Origin, development structure and function of primary and secondary tissues.
5. **Genetics** - Laws of inheritance, concept of gene and genetic code, Linkage, crossing over, gene mapping, Mutation and polyploidy. Hybrid vigour, Sex determination, Genetics and plant improvement.
6. **Plant Diversity** - Structure and function of plant form from evolutionary aspect (viruses to angiosperms, including lichens and fossils)
7. **Plant Systematics** - Principles of nomenclature, classification and identification, Modern approaches in plant taxonomy.
8. **Plant Growth and Development** - Dynamics of growth, Growth movements, Growth substances, Factors of morphogenesis, Mineral nutrition, Water relations, Elementary knowledge of Photosynthesis, Respiratory metabolism, Nitrogen metabolism, nucleic acids and protein synthesis. Enzymes, Secondary metabolites, Isotopes in biological studies.
9. **Methods of Reproduction and Seed Biology** - Vegetative, asexual and sexual methods of reproduction. Physiology of flowering. Pollination and fertilization. Sexual incompatibility. Development, structure, dormancy and germination of seed.
10. **Plant pathology** - Knowledge of diseases of Rice, Wheat, Sugarcane, Potato, Mustard, Groundnut and Cotton Crops. Principles of biological control. Crown gall.

**11. Plant and Environment** - Biotic components. Ecological adaptation. Type of vegetational zones and forests of India, Deforestation, afforestation, social forestry, Soil erosion, wasteland reclamation. Environmental pollution, bioindicators, Plant introduction.

**12. Botany** - Human Concern -Importance of conservation, Germplasm,resources, 'endangered, threatened and endemic taxa. Cell, tissue, organ and protoplast cultures in propagation and enrichment of genetic diversity. Plants as sources of food , fodder, forage, fibers, fatty oils, drugs, wood and timber, paper, rubber, beverages, spices, essential oils and resins, gums, dyes, insecticides, pesticides and ornamentation.

Biomass as a source of energy. Biofertilizers, Biotechnology in agri-horticulture, medicine and industry.

#### **4. CHEMISTRY**

**SECTION - A** :- Atomic number, Electronic Configuration of elements, Aufbau principle, Hund's Multiplicity Rule, Pauli's Exclusion principle, long form of the Periodic Classification of elements; salient characteristics of 's', 'p', 'd' and 'f' block elements.

Atomic and ionic radii, ionization potential, electron affinity and electronegativity; their variation with the position of the element in the periodic table.

Natural and artificial radioactivity theory of nuclear disintegration; disintegration and displacement laws; radioactive series; nuclear binding energy, nuclear reaction, fission and fusion, radioactive isotopes and their uses.

Electronic theory of valency, Elementary ideas about sigma and pi-bonds, hybridization and directional nature of covalent bonds. Shapes of simple molecules, bond order and bond length.

Oxidation states and oxidation number, Common redox reactions; Ionic equations.

Bronsted and Lewis theories of acids and bases.

Chemistry of common elements and their compounds, treated from the point of view of periodic classification.

Principles of extraction of metals, as illustrated by sodium, copper, aluminium, iron and nickel.

Werner's theories of coordination compounds and types of isomerism in 6 and 4 coordinate complexes. Role of coordination compounds in nature, common metallurgical and analytical operations.

Structures of diborane, aluminium chloride, ferrocene alkyl magnesium halides, dichlorodiamineplatinum and xenon chloride.

Common ion effect, solubility product and their applications in qualitative inorganic analysis.

**SECTION B** :- electron displacements: inductive, mesomeric and hyperconjugative effects - effects of structure on dissociation constants of acids and bases - bond formation and bond fission of covalent bonds - reaction intermediates - carbonations, carbanions, free radicals and carbenes nucleophiles and electrophiles.

Alkanes, alkenes and alkyes - petroleum as a source of organic compounds - simple deralives of alphatic compounds; halides, alcohaols, aldehides, ketones, acids, esters, acid acid cholorides, amodes, anthydrides, ethers, amines and nitro compounds monohydroxy, ketonic and amino acids - griganaar reagents - active methyl one group - malonic and acotoaeetic esters and their synthetic uses - unsaturated acides.

**STEREO CHEMISTRY:-** elements of synetry, chirality optical isomerism of lactic and tartaric acids, D.L. notation RS. - notation of compounds containing - chiral centers, concept of information Tischer, sawhors and Newman projections of butanes - 23 - dialogeometrical isomerism of maleic and fumaric acids, x and z notation of geometrical isomers.

**CARBOHYDRATES:-** Classification and general reactions, structures of glucose, fructose and sucrose, general idea on the chemistry of starch and cellulose.

Benzene and common monofunctional benezenoid compounds concept of aromatericity as applied to benzene, naphthalene and pyrolecorientation influence in aromatic substitution - Chemistry and uses of diazonium salts.

Elementary idea of the chemistry of oils, facts, proteins and vitamins - their role in nutrition and industry.

Basic principle underlying spectral techniques (UV - Visible, IR. Raman and NMR)

**SECTION C :-** Kinetic theory of gasses and gas law. Mazwells law of distribution and velocities, Vander vans equitio law of corresponding states. Specific heat of gases, ratio CP/CV.

**THERMODYNAMICS :-** The first law of thermodynamics, isothermal and adiabatic expansion. Enthaply, heat capacities and thermochemistry, Heats of reaction, Calculation of bond energies, Kirchffs equation. Criteria for spontaneous changes. Second law of thermodynamics, Entroph, Free energy, Criteria for chemical equilibrium.

**SOLUTIONS:-** Osmotic pressure, Lowering of vapour preasure, depression of freezing point and elevation of point. Determination of molecular weight in solution. Association and disassociation of solutes.

**CHEMICAL EQUILIBRIA :-** Law of mass action and its application to homogeneous and heterogenous equilibria; Le Chatelier principle and its application to chemical equilibria.

**CHEMICAL KINETICS:-** Molecularity and order of reaction, First order and second order reaction. Temperature coefficient and energy of activation. Collision theory of reaction rates Qualitative theory of activated complex.

**ELECTRO CHEMISTRY :-** Farady's laws of electrolytes conductivity of an electrolyte, Equivalent conductivity and its variation with dilution. Solubility of sponringly soluble salts. Electrolytic disassociation. Ostwald's dilution law, anomaly of strong electrolytes. Solubility product, Strength of acids and basis, Hydrolysis of Salts, Hydrogen ion concentration Buffer action, Theory of indicators.

**REVERSIBLE CELLS :-** Standard hydrogen and Claomal electrodes. Redox potential Concentration cells, ionic product of water, potentiometric titrations.

**PHASE RULE :-** Explanation of terms involved. Application to one and two component systems, Distribution Law.

**COLLOIDS** :- General nature of colloidal solutions and their classification, Coagulation, Protective action and gold number absorption.

**Catalysis** :- Homogeneous and heterogeneous catalysis Promoters and Poisons.

## 5. CIVIL ENGINEERING

**Engineering Mechanics: Statics:** Units and dimensions SI Units, Vectors, coplanar and noncoplanar force systems, equations of equilibrium, free body diagrams, static friction. virtual work, distributed force systems, first and second moments of area, mass moment of inertia.

**Kinematics and Dynamics** : Velocity and acceleration in cartesian and curvilinear coordinate systems, equations of motion and their integration, principles of conservations of energy and momentum, collision of elastic bodies, rotation of rigid bodies about fixed axis, simple harmonic motion.

**Strength of Materials:** Elastic isotropic and homogeneous materials, stress and strain, elastic constraints, relation among elastic constants, axially loaded determinate and indeterminate members, shear force and bending moment diagrams, theory of simple bending, shear stress distribution, stitched beams.

**Deflection of beams:** Macaulay method, Mohr theorems, Conjugate beam method, torsion, torsion of circular shafts, combined bending, torsion and axial thrust, close coiled helical springs strain energy, strain energy in direct stress, shear stress, bending and torsion.

Thin and thick cylinders, columns and struts, Euler and Rankine loads, principal stress and strains in two dimensions - Mohr circle - theories of elastic failure. Structural Analysis; Indeterminate beams, propped, fixed and continuous beams, shear force and bending moment diagrams, deflections, three-hinged and two hinged arches, rib-shortening, temperature effects, influence lines.

**TRUSSES:** method of joints and method of sections, deflections of plane pin-jointed trusses.

**RIGID FRAMES** : analysis of rigid frames and continuous beams by theorem of three moments, moment distribution method, slope deflection method, kani method and column analogy method, matrix analysis, Rolling loads and influence lines for beams and pin-jointed girders.

**SOIL MECHANICS:** Classification and identification of soils, phase relationships; surface tension and capillary phenomena in soils, laboratory and field determination of coefficient of permeability; seepage Forces, flow nets, critical hydraulic gradient, permeability of stratified deposits; Theory of compaction, compaction control; total and effective stresses, pore pressure coefficient, shear strength parameters in terms of total and effective stress, mohr-coulomb theory; total and effective stress, analysis of soil slopes; active passive pressures; rankine and Coulomb theories of earth pressure. Pressure, distribution on trench sheeting, retaining walls, sheet pile walls; soil consolidation, Terzaghi one-dimensional theory of consolidation, primary and secondary settlement.

**FOUNDATION ENGINEERING:** Exploratory programme for sub-surface investigations, common types of coring and sampling, field test and their interpretation, water level observations; Stress distribution beneath loaded areas by Boussinesq and Steinbrenner methods, use of influence charts, contact pressure

distribution determination of ultimate 'bearing capacity by terzaghi, Skempton and Hansen's methods; allowable bearing pressure beneath footings; and rafts; settlement criteria, design aspects of footings and rafts; bearing capacity of piles and pile groups, pile load tests, underreamed piles for swelling soil; well foundations, conditions of static equilibrium, vibration analysis of single degree freedom system, general considerations for design of machine foundations; earthquake effects on soil-foundation / systems, liquefaction,

**FLUID MECHANICS:** fluid properties, fluid statics. forces on plane and curved surfaces, stability of floating and submerged bodies.

**KINEMATICS:** Velocity, streamlines, continuity equation. accelerations. irrotational and rotational flow, velocity potential and stream function, flow net. separation and stagnation.

**DYNAMICS:** Euler's equation along stream line. energy and momentum equations. Bernoulli's theorem, applications to pipe flow and free surface flows, free and forced vortices.

**DIMENSIONAL ANALYSIS AND SIMILITUDE:** Buckingham's Pi theorem, dimensions parameters, similarities, undistorted and distorted models. Boundary layer on a flat plate, drag and lift on bodies.

**LAMINAR AND TURBULENT FLOWS:** Laminar flow through pipe and between parallel plates, transition to turbulent flow, turbulent flow through pipes, friction factor variation, 'energy loss in expansions, contraction and other non-uniformities, energy grade line and hydraulic grade line, pipe networks, water hammer.

**COMPRESSIBLE FLOW:** isothermal and isentropic flows, velocity of propagation of pressure wave, Mach number, subsonic and supersonic flows, shock waves.

**OPEN CHANNEL FLOW:** uniform and non-uniform flows, specific energy and specific force, critical depth, flow in contracting transitions, free overfall, weirs, hydraulic jump, surges gradually varied flow equation and its integrator, surface profiles.

**SURVEYING:** General principles: sign conventions, chain surveying, principles of plane table surveying, two - point problem, three point problem compass surveying traversing; bearing local, attraction, traverse computations, corrections.

**LEVELLING:** Temporary and permanent adjustments; fly - levels, reciprocal levelling, contour levelling; Volume computations, refraction and curvature corrections.

**THEODOLITE:** adjustments traversing, heights and distances, tacheometric surveying,

**CURVE SETTING BY CHAIN AND BY THEODOLITE:** Horizontal and vertical curves.

**TRIANGULATION AND BASE - LINE MEASUREMENTS:** satellite stations, trigonometric leveling, astronomical surveying, celestial co-ordinates, solution of spherical triangles, determination of azimuth, latitudes, longitude and time.

Principles of aerial photogrammetry, hydrographic surveying.

## 6. COMMERCE

### Part I : ACCOUNTING:



Accounting equation - concept and conversions generally accepted accounting principles - capital and revenue expenditures and receipts - preparation of the financial statements including statements of sources and application of funds - Partnership accounts including dissolution and piece meal distribution among the partners 'accounts of non-profit organization - Preparation of account from incomplete records - Company Accounts issue and redemption of shares and debentures Capitalisation of profits and issue of bonus shares - Accounting for depreciation including accelerated methods of providing depreciation inventory valuation and control.

Ratio analysis and interpretation - Ratios relating to short-term liquidity, long term solvency and profitability- importance of the rate of return on investment (ROI) in evaluating the overall performances of a business entity.

Nature and objects of auditing - Balance sheet and Continues audit - Statutory management and operational audits - Auditors working papers internal control and internal audit - Audit of proprietary and partner-ship firms Broad out-lines of the Company audit.

## **Part- II : BUSINESS ORGANISATION & SECRETARIAL PRACTICE:**

Distinctive Features of different forms of Business organisation, Formalities and documents in floating a joint stock Company-Doctrine of indoor management and principle of constructive notice - Type of securities and methods of their issue - Economic functions of the new issues market and Stock exchange - Business combinations - Control of monopoly houses - Problems of modernization of industrial enterprises. Procedure and financing of export and import trade - incentives for export promotion Role of the EXIM Bank - Principles of insurance, Life, fire and marine.

Management Functions: Planning, organizing, staffing, Directing, Co-ordination and control.

Organisation Structure: Centralisation and Decentralisation, delegation of authority, span of control, Management objective and management by exception.

OFFICE MANAGEMENT: Scope and principles - systems and routines - Handling of records -office equipment and machine-impac of organization and methods (O & W).

COMPANY SECRETARY: Functions and scope-Appointment qualification and disqualification-Rights, duties and liabilities and company Secretary - Drafting of agenda and minutes.

## **7. CRIMINOLOGY**

1. a) Definitions of Criminology by E.H. Sutherland. Michael and Adler. D.R Taft, M.J. Sethana, RS.Cam and Elliot and Merrill.
- b) Scope and objective of Criminology.
- c) Its relationship with - Sociology, Psychology, Anthropology, Forensic Science, Penology, Law.
- d) Definition of Crime: i) Legal. ii) Sociological, iii) General.
- e) Classification .of Crime: i) Indian Penal Code, ii) British Common Law, iii) Bonger William, Cesser Lambrose, iv) Statistical.

- f) Methods of Criminology: i) Case Study, ii) Experimental, iii) Ecological, iv) Statistical. v) Observation.
2. Theories of Criminology: i) Pre-Scientific theories, ii) Classical and Non-Classical School, iii) Cartographic School, iv) Sociologist School.
    - v) Typological Schools: a) Lambroso's mental Testers. b) Psychiatric.
    - vi) Sociological Schools; a) Differential Association theory, b) Multiple factors analysis.
  3. a) Criminal-classifications: i) Casare Lambrese, ii) Charles Goring, iii) M.J. Sethana, iv) Scientific classification.
    - b) Criminal Patterns: i) Professional Criminals, ii) Habitual Criminals; iii) White Collar Criminals, iv) Organised Criminals .
    - c) De-notified Tribes.
    - d) Etilogy of Crime: i) Geographical, ii) Physiological, iii) Psychological, iv) Social, v) 'Economic, vi) Political
    - e) Victimology - typology of victims, their problems and factors involved and compensation and restitutions.
  4. Criminal Law - General Exceptions: & Explanations
    - i) Offences against Human body and property under Section 299 to 338 and 341 to 376 and 378 to 402 . I.P.C.
    - ii) Organisation set-up of Criminal Courts in India, their powers, police powers of arrest, search and seizure and provisions for bail and appeal.
    - iii) Types of evidences - admissions and confessions and expert evidences.
  5. Meaning and historical development of Forensic science and its role in crime detection.
  6. Organisation and Functions of
    - i) Central and State Forensic Science Laboratories.
    - ii) Central and State Finger Print Bureau.
  7. Physical clues:
    - a) FingerPrints.
      - i) Principles of dectyloscopy.**
      - ii) Recording of Finger Prints.
      - iii) Finger Prints patterns.
      - iv) Types of Chance Prints and their development.
      - v) Classification of finger prints by Henry's.
    - b) Foot Prints:
      - i) Types
      - ii) Lifting of Sunken foot prints.
      - iii) Tracing of surface foot prints.

- iv) Walking picture.
- c) Hair :
  - i) Morphology
  - ii) Difference of Human and Animal hair.
- d) Blood:
  - i) Blood Tests.
  - ii) Blood grouping.
  - iii) Body fluids: Urine, Saliva, Semens.
- e) Fire Arms :
  - i) Classification of fire arms.
  - ii) Identification of Fire arms and ammunicions.
- f) Tool marks - Types and examination of tools.
- g) Documents:
  - i) Types.
  - ii) Examination of Documents.
  - iii) Erasers, Obliterations, alterations.
  - iv) Characteristics of Hand written and type written documents.
- h) Glass Fractures:
  - i) Types.
  - ii) Determination of direction of force.
- a) Enquestt:
  - i) Police.
  - ii) Coroners.
  - iii) Magistrates.
- b) Wounds and injuries: Medico -legal importance.
- c) Poisons:
  - i) Classification
  - ii) Factors modifying the action of poisons.
  - iii) Routes of administration.
  - iv) Routes of elimination.
- d) Death:
  - i) Modes.
  - ii) Signs
  - iii) Changes after death.

e) Identification of living and dead.

Police Science:

a) Central and State Police Organisation.

b) Powers and duties of Police.

c) Police and Public relations.

d) Crime Preventive Methods:

i) Patrolling.

ii) Surveillance.

iii) Collection of intelligence.

e) Registration of Cases:

i) First Information Report

ii) Charge Sheet:

iii) Final Report

f) Methods of Investigation

i) Informers.

ii) Interrogation of suspects.

iii) Instrumentation.

iv) Interviewing of witnesses.

v) Modus Operandi Bureau.

vi) Dog Squad.

vii) Scientific Aid Units.

g) Investigating Officer and his qualities.

h) Scene of Crime:

i) Meaning and importance.

ii) Types.

iii) Examination of scene of crime.

iv) Procedure of handling packing and forwarding physical clues to experts.

10. i) History of punishments.

ii) Theory of punishment.

ii) Forms of punishment.

iii) Origin and development of Indian prison.

iv) Prison administration.

v) Probation and Parole.

11. Correctional Institutions:

i) Juvenile Home.

- ii) Special Home.
- iii) Borstal School.
- iv) State Homes.
- v) Juvenile Service Bureau.
- vi) Juvenile Club.
- vii) Juvenile Courts.

12. Social Problems: Definition, causes, effects and preventions.

- i) Prostitution.
- ii) Juvenile Delinquency.
- iii) Beggary.
- iv) Terrorism.
- v) Communal Violence.
- vi) Dowry.
- vii) Alcoholism and drug addiction.
- viii) Suicide.
- ix) Environmental Pollution.

13. Concept of normal and abnormal behaviour:

- i) Mental Mechanism and criminal behaviour
- ii) Mental Disorders and Mental deficiency in relation to criminal behaviour;
- iii) Psychopathic personality.

## **8. ECONOMICS**

### **PART-1**

1. NATIONAL ECONOMIC ACCOUNTING: National Income Analysis, generation and Distribution of Income and related aggregation, Gross National Product, Net National Product, Gross Domestic Product and 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 and production.
3. MONEY & BANKING: definition 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. and Heckscher - Ohlin; the balance of payments and the adjustment mechanism. Trade Theory and economic growth and development.

### **PART - II**

**ECONOMIC GROWTH AND DEVELOPMENT** : Meaning and measurement characteristics of under development; rate and pattern, Modern Economic Growth; sources of growth distribution and growth; problems of growth of developing economics.

### **PART - III**

**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 solutions. Public Finance and Economic Policy.

### **KARNATAKA ECONOMY**

**CHARACTERISTICS OF KARNATAKA** : Physical features and climate-Natural Resources - Flora and Fauna-size and population major regions.

**DEVELOPMENT OF AGRICULTURE AND ALLIED ACTIVITIES:** Irrigation potential-Land Reforms - Agricultural pricing, finances and marketing - State Poverty alleviation programmes - Jawahar Rozgar Yojana etc., Housing Forestry - Fisheries Development - Export Potentiality - Appropriate technology - Industrial Development-Growth of Industries Cotton Textiles - Cement - Silk - Gold Mining - paper - Sugar etc., New Industrial- Policy - Critical appraisal Industry - Vs. Environment - Industrial estates- - Banks and Industrial Development - Globalisation and emergine economic scenario in Karnataka - Small Scale Industries.

**PLANNING:** The planning processes - State Planning Board - District level planning - Five year Plans Objectives and Strategies - Evaluation of Plans -Employment Generation Schemes.

**STATE BUDGETS:** Objectives - Finances for Local Bodies - Octroi - Entry Tax - Entertainment Tax - Resource Mobilisation - Salesation Sales Tax - Excise Duties - Profession Tax - Value added Tax -Decentralisation of Economic power - Panchayat Raj - Three Tier System - Strengths and weaknesses -Finance per Panchayat Raj - Recommendations of Dr. Honnavar Committee - State Finance Commission - Infrastructure - Transportation - roads (KSRTC) - Railways - Air Transport - Ports - Post and Telecommunications - Electricity (KEB)

## **9. ELECTRICAL ENGINEERING**

Primary and Secondary Cells, Fry accumulators, Solar Cells, Steady State Analysis of d.c. and a.c. network; network theorems; network functions, Laplace techniques, transient response; frequency response; three phase networks; inductively coupled circuits.

Mathematical Modeling of dynamic linear systems, transfer functions block diagrams; stability of control system.

Electrostatic and magnetostatic field analysis; Maxwell's equations. Wave equations and electromagnetic waves.

Basic methods of measurements, standards, error analysis, indicating instruments, cathode ray oscilloscope, measurement of voltage current; power resistance inductance, capacitance, frequency, time and flux; electronic meters.

Vacuum based and Semi-conductor devices and analysis of electronic Circuits; single and multistage audio, and radio small signal and large signal amplifiers; oscillators and feedback amplifiers; waveshaping circuits and time base generators; multivibrators and digital circuits; modulation and demodulation circuits. Transmission line at audio, radio and D.H. frequencies; wire and Radio communication.

**Generation** of e.m.f. and torque in rotation, machine; motor and generator characteristics of d.c. synchronous and induction machines, equivalent circuits; communication starters; phase diagram, losses, regulation; power transformers.

Modelling of transmission lines, steady, state and transient stability, surge phenomena and installation co-ordination; protective devices and schemes for power system equipment.

Conversion of a.c. to d.c. and d.c. to a.c. controlled and uncontrolled power, speed control techniques for drives.

## **10. GEOGRAPHY**

### **SECTION - A**

#### **GENERAL PRINCIPLES:**

- i) Physical Geography
- ii) Human Geography
- iii) Economic Geography
- iv) Cartography
- v) Development of Geographical thought

### **SECTION - B**

#### **GEOGRAPHY OF THE WORLD**

- i) World Land Forms, climates, Soils and Vegetation
- ii) Natural regions of the World
- iii) World Population; Growth and distribution, Races of mankind and international migration, Cultural realms of the world.
- iv) World agriculture; fishing and forestry. minerals and energy resources. World Industries.
- v) Regional study of Africa. South-East Asia, South-West Asia. Anglo-America, U.S.S.R. and China.

### **SECTION - C**

#### **GEOGRAPHY OF INDIA WITH SPECIAL REFERENCE TO KARNATAKA**

- i) Physiography, climate, soils and vegetation.
- ii) Irrigation and agriculture; Forestry and fisheries
- iii) Minerals and energy resources
- iv) Industries and Industrial Development
- v) Population and Settlement

## **11. LAW**

## **I. JURISPRUDENCE:**

1. Schools of jurisprudence; Analytical, Historical. Philosophical and Sociological.
2. Sources of Law; custom; precedent and legislation.
3. Rights and Duties.
4. Legal Personality.
5. Ownership and possession.

## **II CONSTITUTIONAL LAW OF INDIA**

1. Salient features of the Indian Constitution
2. Preamble
3. Fundamental Rights, Directive Principles and Fundamental Duties.
4. Constitutional position of the President and Governor and their powers;
5. Supreme Court and High Court, their powers and Jurisdiction;
6. Union Public Service Commission and State Public Service Commission their powers and functions;
7. Distribution of legislative powers between the Union and the States.
8. Emergency provisions;
9. Amendment of the Constitution.

## **III. INTERNATIONAL LAW**

1. Nature of International Law.
2. Sources; Treaty, Custom, General Principles of Law recognized by civilized Nations and subsidiary means for the determination of law.
3. State Recognition and State Succession.
4. The United Nations; its objectives and principal organs; the constitution, role and jurisdiction of the international Court of Justice.

## **IV. TORTS:**

1. Nature and definition of tort;
2. Liability based on fault and strict liability;
3. Vicarious Liability;
4. Joint Tort-feasors;
5. Negligence;
6. Defamation;
7. Conspiracy;
8. Nuisance;
9. False imprisonment and malicious prosecution;

## **V. CRIMINAL LAW:**

1. General principles of Criminal Liability;



2. Mens rea ; .
3. General exceptions;
4. Abatement and conspiracy;
5. Joint and constructive liability;
6. Criminal attempts
7. Murder and Culpable homicide;
8. Sedition.
9. Theft; extortion, robbery and dacoity; .
10. Misappropriation and criminal breach of trust;

#### **VI.LAW OF CONTRACT:**

1. Basic elements of contract; offer, acceptance, consideration, contractual capacity.
2. Factors vitiating consent.
3. Void, Voidable, illegal and unenforceable agreements.
4. Performance of contracts.
5. Disolution of contractual obligations, frustration of contracts.
6. Quasi-contracts.
7. Remedies for breach of contract.

#### **12. MATHEMATICS**

**ALGEBRA:** Sets, relations, equivalence relations, Natural numbers, integers, Rational numbers, Real and Complex numbers. division algorithm. greatest common divisor polynomials. division algorithm. derivations, Integral, rational real and complex roots of a polynomial, Relation between roots and Co-efficients, repeated roots, elementary symmetric functions, Groups, rings, fields and their elementary properties.

**MATRICES:** Addition and multiplication, elementary row and column operation, rank determinants, inverse, solutions of systems of linear equations.

**CALCULUS:** Real numbers, order completeness property standard function, limits, continuity, properties of continuous functions in closed intervals, differentiability. Mean value Theorem. Taylors Theorem, Maxima and Minima. Application to curves-tangent normal properties, Curvature, asymptotes, double points, points of inflexion and tracing.

Definition of a definite integral of continuous function as the limit of a sum, fundamental theorem of integral Calculus, methods of integration, rectification quadrature, volume and surfaces of solids of revolution.

Partial differentiation and its application.

Simple test of convergence of series of positive terms alternating series and absolute convergence.

**DIFFERENTIAL EQUATIONS:** First order differential equations, Singular solutions, geometrical interpretations, linear differential equations with constant co-efficients.

**GEOMETRY:** Analytic Geometry of straight lines and conics referred to Cartesian and polar coordinates; three dimensional geometry for planes, straight lines, sphere, cone and cylinder.

**MECHANICS:** Concept of particle, lamina, rigid, body, displacement, force, mass weight, concept of scalar and vector quantities, Vector Algebra, Combination and equilibrium of Coplanar forces, Newton's Laws of motion, motion of a particle in a straight line; Simple Harmonic motion, Projectile, circular motion, motion under central forces (inverse square law) escape velocity.

### **13. HISTORY**

#### **SECTION - A**

1. Foundations of Indian Culture and Civilization; Indus Civilization, Vedic Culture, Sangam Age.
2. Religious Movement; Buddhism, Jainism / Bhagavatism & Brahmanism.
3. The Mauryan Empire.
4. Trade Commerce in the pre-Gupta and Gupta periods.
5. Agrarian structure in the post-Gupta period.
6. Changes in the social structure of ancient India.

#### **SECTION - B**

1. Political and Social conditions during the period 800-1200 The Cholas.
2. The Delhi Sultanate; Administration and Agrarian conditions
3. The provisional Dynasties; Vijayanagar Empire - Society and Administration.
4. The Indo-Islamic culture; Religious movements of 15th and 16th Centuries.
5. The Mughal Empire (1526- 1707) : Mughal Polity; agrarian relations; art, architecture and culture under the Mughals.
6. Beginning of European Trade and Commerce.
7. The Maratha Kingdom and Confederacy.

#### **SECTION - C**

1. The decline of the Mughal Empire; the autonomous states with special reference to Bengal, Mysore and Punjab.
2. The East India company and the Bengal Nawabs. Emergence of Hyder and Tipu; Anglo-Mysore; Mysore- Nizam relations.
3. British Economic Impact on India.
4. The Revolt of 1857 and other popular movements against British rule in the 19th Century; Rendition of Mysore - Reasons for annexation.
5. Social and cultural awakening; the lower caste; trade union and the peasant movements.
6. The Freedom struggle; Mysore Congress and Independence movement in Karnataka; Karnataka after Unification and Backward Class Movement;

### **14. MECHANICAL ENGINEERING**

**STATICS:** Simple applications of equilibrium equations.

**DYNAMICS:** Simple applications of equations of motion, simple harmonic motion, work energy, power

**THEORY OF MACHINES :** Simple example of links and mechanism, Classification of gears standard gear tooth profiles. Classification of bearing, Function of fly wheel. Types of Governors, Statics and dynamic balancing, simple examples of vibration of bars, whirling of shafts.

**MECHANICS OF SOLIDS:** Stress, Strain, Hook's law, elastic moduli, Bending moments and shearing force diagrams for beams. Simple bending and torsion of beams springs, thin walled cylinders, Mechanical properties and material testing.

**MANUFACTURING SCIENCE:** Mechanics of metal cutting, tool life, economics of machining, cutting tool materials, Basic machining processes, types of machine tools, transfer lines, shearing, drawing, spinning, rolling, forging, extrusion, Different types of casting and welding methods.

**PRODUCTION MANAGEMENT:** Method and time study, motion economy and work space design, operation and flow process charts. Product design and cost selection of manufacturing process. Break even analysis, Site selection, plant layout, materials handling Selection of equipment for job, shop and mass production, Scheduling dispatching routing.

**THERMODYNAMICS:** Heat, work and temperature, first and second laws of thermodynamics Carnot, Rankine, Otto and Diesel Cycles.

**FLUID MECHANICS:** Hydrostatics Continuity equation, Bernoulli's theorem, Flow through pipes. Discharge measurement. Laminar and Turbulent flow, concept of boundary layer.

**HEAT TRANSFER:** Heat transfer by conduction, Convection and Radiation. One dimensional steady state conduction through walls and cylinders. Fins, Concept of thermal boundary layer. Heat transfer, co-efficient, Combined heat transfer, co-efficient, Heat exchangers.

**ENERGY CONVERSION:** Compression and spark ignition engines, Compressors, fans and blowers. Hydraulic Pumps and turbines, Thermal turbo machines.

Boiler Flow of steam through nozzles layout of power plants.

**ENVIRONMENTAL CONTROL:** Refrigeration cycles, refrigeration equipment - its operation and maintenance, important refrigerants, Psychometrics comfort, cooling and dehumidification.

## 15. PHILOSOPHY

I Logic-Symbolic Logic Syllogism and fallacies, Mathematical Logic, Truth Functional Logic.

II History of Indian Ethics: Source, Types, Meaning of Dharma; Ethics and Meta Physics; and Karma and Freewill; Karma and Gyana;

III History of Western Ethics; Moral Standards Judgement, Order and progress; Ethics and Emotivism; Determinism and Freewill; Crime and Punishment, Individual and Society.

IV History of Philosophy - Western; Indian Orthodox; Indian Heterodox.

## 16. GEOLOGY

### PART - I

- (a) **PHYSICAL GEOLOGY:** Solar system and the Earth origin, age and internal constitution of Earth weathering Geological work of river, Lake, glacier, wind, sea and groundwater, Volcanoes - types distribution, geological effects and products; Earthquakes - distribution causes and effects. Elementary ideas about geo synclines, isostasy and mountain building, continental drift, seafloor spreading and plate tectonics.
- (b) **GEOMORPHOLOGY :** Basic concepts of geomorphology, Normal cycle of erosion, drainage patterns. Landforms formed by ice, wind and water.
- (c) **STRUCTURAL AND FIELD GEOLOGY:** Clinometer compass and its use. Primary and Secondary structures. Representation of attitude, slope; strike and dip. Effects of topography on outcrop. Folds, Fault, Unconformities and Joint their description, classification. recognition in the field and their effects on outcrops. Criteria for the determination of the order of super-position in the field. Nappes and Geological windows. Elementary ideas of geological survey and mapping.

### PART - II

- (8) **CRYSTALLOGRAPHY:** Crystalline and amorphous substances. Crystal, its definition and morphological characteristics; elements of crystal structure. Laws of Crystallography. Symmetry elements of crystal belonging to normal class of seven Crystal Systems. Crystal habits and twinning.
- (b) **MINERALOGY:** Principles of optics. Behaviour of light through isotropic and anisotropic substances. Petrological microscope; construction and working of Nicol Prism, Birefringence; Pleochroism; extinction. Physical, chemical and optical properties of more common rock forming minerals of following groups; quartz, feldspar, mica, amphibole, pyroxene, olivine, garnet, chlorite and carbonate.
- (c) **ECONOMIC GEOLOGY:** Ore, Ore mineral and gangue. Outline of the processes of formation and classification of ore deposits. Brief study of mode of occurrence, origin, distribution (in India) and economic uses of the following; gold, ores of iron, manganese, chromium, copper, aluminum, lead and zinc; mica, gypsum, magnesite and kyanite; diamond; coal and petroleum.

### PART. III

#### PETROLOGY

- (a) **IGNEOUS PETROLOGY:** Magma- its composition and nature, Crystallization of Magma, Differentiation and assimilation. Bowen's reaction principle Texture and structure of igneous rocks. Mode of occurrence and mineralogy of igneous rocks. Classification and varieties of igneous rocks.
- (b) **SEDIMENTARY PETROLOGY:** Sedimentary process and products. An outline Classification of sedimentary rocks. Important primary sedimentary structures (Bedding, cross bedding, graded bedding ripple marks, sole structures, parting lineation).

Residual deposit their mode of formation, characteristics and important types.

Clastic deposits, their classification, mineral composition and texture, Elementary knowledge of the origin and characteristics of quartz arenites, arkoses and greywackers. Siliceous and calcareous deposits of chemical and organic origin.

- (c) **METAMORPHIC PETROLOGY:** Definition, agents & types of metamorphisms, Distinguishing characters of metamorphic rocks Zones, grades of metamorphic rocks. Texture and structure of metamorphic rocks. Basis of classification of metamorphic rocks. Brief petrographic description of quartzite, Slate, schist, gneiss, marble and hornfels.

#### **PART-IV**

- (a) **PALAEONTOLOGY:** Fossils, conditions for entombment, types of preservation and uses. Broad morphological features and geological distribution of brachiopods, bivalves (lamelli branches) gastropods, cephalopods, trilobites, echinoids and corals. A brief study of Gondwana flora and Silkwalik mammals.
- (b) **STRATIGRAPHY:** Fundamental laws of stratigraphy, Classification of the stratified rocks into groups, systems and series etc. and classification of geologic time into eras, periods and epochs. An outline Geology of India and a brief study of the following systems with respect to their distribution, lithology, fossil interest and economic importance, if any : Dharwar, Windhya, Gondwana and Siwalik.

#### **17. PHYSICS**

**1. MECHANICS:** Units and dimensions, S.I. Units, Motion in one and two dimensions, Newton's law of motion with applications. Variable mass systems, Frictional forces, Work power and Energy. Conservative and non-conservative systems, Collisions, Conservation of energy. Linear and angular momenta. Rotational Kinematics. Rotational dynamics. Equilibrium of rigid bodies. Gravitation, Planetary motion, Artificial Satellites, Surface tension and Viscosity. Fluid dynamics. streamline and turbulent motion. Bernoulli's equation with applications. Stoke's Law and its application, special theory of relativity, Lorentz transformation, Mass Energy equivalence.

**2. WAVES & OSCILLATIONS:** Simple harmonic motion, Travelling and Stationary waves Super position of waves, Beats, Forced oscillations, Damped Oscillations, Resonance, Sound waves. Vibrations of air column, strings and rods. Ultrasonic waves and their application. Doppler effect.

**3. OPTICS:** Matrix method in paraxial optics. Thin lens formulae. Nodal planes, systems of two thin lenses. Chromatic and Spherical aberration, Optical instruments, Eyepieces, Nature and Propagation of light, Interference, Division of waves front. Division of amplitude. Simple interferometers Diffraction - Fraunhofer and Fresnel, Gratings. Resolving power of optical instruments. Rayleigh's criterion Polarization, production and Detection of Polarized light. Rayleigh Scattering Raman Scattering, Lasers and their applications.

**4. THERMAL PHYSICS:** Thermometry, Laws of thermodynamics, Heat engines, Entropy, Thermo dynamic potentials and Maxwell's relations. Vander Waals equation of state, Critical constants, Joule-Thomson effect, phase transition, Transport Phenomenon, heat conduction and specific heat in solids, Kinetic theory of Gases, Ideal Gas equation, Maxwell's velocity distribution, Equipartition of Energy, Mean free Path. Brownian Motion. Black-Body radiation. Planck's Law.

**5. ELECTRICITY AND MAGNETISM:** Electric charge, Fields and potential Coulomb's Law. Gauss Law, capacitance, Dielectrics, Ohm's Law, Kirochoffs Laws, Magnetic field, Ampere's Law, Faraday's Law of Electromagnetic induction, Lan's Law. Alternating currents, LCR Circuits, Series & Parallel resonance, Q-factor, Thermoelectric effects and their applications. Electromagnetic Waves. Motion of charged particles in electric and Magnetic fields, Particle accelerators, Vendo Graff Generator, Cyclotron, Betatron, Mass spectrometer, Hall effect, Dia, Para and ferro magnetism.

**6. MODERN PHYSICS:** Bohr's Theory of Hydrogen atom, optical and X-ray spectra, photoelectric effect. Compton effect, wave nature of matter and wave-particle duality, Natural and artificial radio-activity, alpha, beta and gamma radiation, chain decay, Nuclear fission and fusion. Elementary particles and their classification.

**7. ELECTRONICS:** Vaccum tubes-diode and triode, P and N type materials, P-N diodes and transistors. Circuits for rectification, amplification and oscillations. Logic gates.

## **18. POLITICAL SCIENCE AND INTERNATIONAL RELATIONS**

### **SECTION 'A' (THEORY)**

1. (a) The State-Sovereignty; Theories of Sovereignty.  
(b) Theories of the origin of the State (Social contract, Historical- Evolutionary and Marxist)  
(c) Theories of the functions of the State (Liberal, Welfare and Socialist).
2. (a) Concepts - Rights, property, Liberty, Equality, Justice.  
(b) Democracy - Electoral Process; Theories of Representations; Public Opinion, freedom of speech, the role of the Press; Parties and Pressure Groups.  
(c) Political Theories - Liberalism; Early Socialism. Marxian Socialism, Facism.  
(d) Theories of Development and Under Development Liberal and Marxist.

### **SECTION - B (GOVERNMENT) :**

1. Government - Constitution and Constitutional Government, Parliamentary and Presidential Government Federal and Unitary Government; State, and Local Government; Cabinet Government; Bureaucracy.
2. India- (a) Colonialism and Nationalism in India; the national liberation movement and constitutional development.  
(b) The Indian Constitution, Fundamental Rights, Directive Principles of State Policy; Legislature; Executive, . Judiciary, including Judicial Review; the Role of Law.  
(c) Federalism, including Centre State Relations. Parliamentary system in India.  
(d) Indian Federalism compared and contrasted with federalism in the USA, Canada, Australia, Nigeria and Federal Republic of Germany and the USSR.

## **19. PSYCHOLOGY**

- i. Scope and methods, Subject matter
- ii. Methods, Experimental methods, Field studies, Clinical and case methods, Characteristics and psychological studies.

- iii. Physiological basis, Structure and functions of the nervous system, structure and functions of the endocrine system.
- iv. Development of Behaviour, Genetic mechanism Environmental factors, Growth and maturation, Relevant experimental studies.
- v. Cognitive processes (i) Perception, perception process, perceptual organization. perception of form colour, depth and time. Perceptual constancy, Role of motivation, social and cultural factors in perception.
- vi. Cognitive Processes (ii) Learning, Learning process, Learning theories, Classical conditioning, Operant conditioning, Cognitive theories, Perceptual learning, Learning and Motivation, Verbal learning Motor learning.
- vii. Cognitive Processes (iii) Remembering-Measurement of remembering, Short-term memory, Long-term memory. Forgetting-Theories of forgetting.
- viii. Cognitive Processes (iv) Thinking, Development of thinking, Language and thought, Images, Concept formation, Problem Solving.
- ix. Intelligence, Nature of intelligence, Theories of intelligence, Measurement of intelligence, Intelligence and creativity.
- x. Motivation, Needs, drives and motives. Classification of motives, Measurement of motives, Theories of motivation.
- xi. Personality-Nature of Personality, Trait and type approaches, Biological and sociocultural determinants of personality, Personality. assessment techniques and tests.
- xii. Coping Behaviour, Coping mechanisms. Coping with frustration and stress conflicts.
- xiii. Attitudes, Nature of attitudes, Theories of attitudes, measurement of attitudes change of attitudes.
- xiv. Communication, Types of communication, Communication process, Communication network, Distortion of communication.
- xv. Applications of psychology in industry, Education and Community.

## **20. PUBLIC ADMINISTRATION.**

- 1. INTRODUCTION:** Meaning, Scope and Significance of public Administration; Private and Public Administration; Evolution of Public Administration as a discipline.
- 2. THEORIES AND PRINCIPLES OF ADMINISTRATION:** Scientific Management; Bureaucratic model; Classical theory; Human Relations Theory; Behavioral Approach; systems approach. The Principles of Hierarchy; Unity of command; Span of control; Authority and Responsibility; Co-ordination; Delegation; Supervision; Line and Staff.
- 3. ADMINISTRATIVE BEHAVIOUR:** Decision making leadership theories; Communication Motivation.
- 4. PERSONNEL ADMINISTRATION:** Role of Civil Service in developing society; Position, Classification; Recruitment; Training; Promotion; Pay and Service Condition; Neutrality and Anonymity.

5. **FINANCIAL ADMINISTRATION:** Concept of Budget; Formulation and execution of budget; Accounts and Audit.
6. **CONTROL OVER ADMINISTRATION:** Legislative, Executive and Judicial control, citizen and administration.
7. **COMPARATIVE ADMINISTRATION:** Salient features of administration in U.S.A., and U.S.S.R., Great Britain and France.
8. **CENTRAL ADMINISTRATION INDIA:** British legacy; constitutional content of Indian administration; The President; the Prime Minister as Real Executive; Central Secretariat, Cabinet Secretariat, Planning Commission, Finance Commission, Controller and Auditor General of India, major patterns of public Enterprises.
9. **CIVIL SERVICE IN INDIA:** Recruitment of all India and 'Central Services. Union Public Service Commission, Training of IAS and IPS Generalists and specialists; Relations with the Political Executives.
10. **STATE DISTRICT AND LOCAL ADMINISTRATION:** Governor, Chief Minister, Secretariat; Chief Secretary; Directorates; Role of District Collector in revenue, Law and Order and development administration; Panchayat Raj, Urban local government; Main features, structure and problem areas.

## 21. SOCIOLOGY

**CONCEPTS:** race and culture; human evolution, Phases of Culture, Culture change, culture contact, acculturation, Cultural relativism society, group, status, role primary secondary and reference groups. Community and association, social structure and social organization, structure and function, objective facts, norms, values and belief systems, sanctions deviance, socio-cultural processes- assimilation, integration cooperation, competition and conflict, Social Demography, Institution; Kinship system and kinship usages; rules of residence and descent; marriage and family; economic systems of simple and complex societies- barter and ceremonial exchange, market economy, political institutions in simple and complex Societies, religion in simple and complex societies; magic; religion and science; Practices and Organisations Social Stratification; Caste, Class and estate.

**COMMUNITIES:** Village, town, city, region.

**TYPES OF SOCIETY:** tribal agrarian, industrial, post-industrial, Constitutional provisions regarding scheduled castes and scheduled tribes.

## 22. STATISTICS

### 1. PROBABILITY (25 PER CENT WEIGHT) :

Classical and axiomatic definitions of probability, simple theorems on probability with examples, conditional probability, statistical independence Bayes' theorem, Discrete and continuous random variables probability mass function and probability density function, cumulative distributions function, joint marginal and conditional probability distributions of two variables, functions of one and two random variables moments, moment generating function chebichev's inequality, Binomial, Poisson Hypergeometric Negative Bi-nominal, Uniform, exponential gamma, 'beta, normal and bivariate normal probability distributions



Convergence in probability weak law of large numbers, simple form of central limit theorem.

## **II. STATISTICAL METHODS (25 PERCENT WEIGHT) :**

Compilation, classification, tabulation and diagrammatic representation of statistical data, measures of central tendency, dispersion, skewness and kurtosis measures of association and contingency correlation and incur regression involving two variables, correlation ration, curve fitting.

Concept of a random sample and statistics, sampling distributing of  $X$ ,  $X^2$ ,  $T$  and  $F$  statistics, their properties, estimation and tests of significance based on them, order statistics and their sampling distributions in case of uniform and exponential parent distribution.

## **III. STATISTICAL INFERENCE (25 PERCENT WEIGHT) :**

Theory of estimation, unbiasedness, consistency, efficiency, sufficiency, Grammer, Lower bound, best linear unbiased estimates, methods of estimation, methods moments, maximum likelihood, least squares, minimum  $X^2$  properties of maximum likelihood estimators (without proof), simple problems of constructing confidence intervals.

Testing of hypothesis, and composite hypotheses, Statistical tests. two kinds of error, optional critical regions for simple hypothesis concerning one parameter. likelihood ratio tests, tests for the parameters of binomial, Poisson, Uniform, exponential and normal distributions. Chi-square test, sign test, run test, median test, Wilcoxon test rank correlation methods.

## **IV. SAMPLING THEORY AND DESIGN OF EXPERIMENTS (25% WEIGHT):**

Principles of sampling, frame and sampling units. sampling and non sampling errors, simple random sampling, stratified sampling, cluster sampling, systematic sampling, ratio and regression estimates, designing of sample surveys with reference to recent large scale surveys in India.

Analysis of variance with equal number of observations per cell in one, two and three way classifications, transformations to stabilize variance. Principles of experimental design, completely randomized design, Randomized block design, Latin square design, missing plot technique, factorial experiments with confounding in design balanced incomplete block designs.

## **23. ZOOLOGY**

1. Cell structure and functions; Structure of an animal Cell, nature and function of cell organelles, mitosis and meiosis, Chromosomes and genes. Laws of inheritance mutation.
2. General Survey and Classification of non-chordates (upto sub-classes) and chordates (upto orders) of following; Protozoa, porifera, Colenterate, Platyhelminthes, Ascheminthes, Annelidia, Arthropoda, Mollusca, Echinodermate and Chordata.
3. Structure, Reproduction and Life history of the following types :  
Amoeba, Monocytis. Plasmodium, Paramaecium. Sycon, Hydra, Obelia, Fasciola. Teenia. Ascaris, Nereis, Phorotima, leech, prawn, scorpion, cockroach. avioalve, a snail, Balanaglosus, an ascidian. Amphioxux.

4. Comparative anatomy of vertebrates: Integument endoskeleton, Locomotory organs, digestive system, respiratory system, heart and circulatory system, urinogenital system and sense organs.
5. Physiology: Chemical composition of protoplasm, nature and function of enzymes, colloids and hydrogen-ion concentration bio-logical oxidation. Elementary physiology of digestion, excretion, respiration. blood, mechanism of circulation with special reference to man. nerve impulse, conduction and transmission across synoptic junction.
6. Embryology: Gametogenesis. fertilization, cleavage, gastrulation; Early development and meta-morphogenesis of frog. Ascidian and retrogressive metamorphosis. Neotery, development of foetal membrane in chick and mammals.
7. Evolution Origin of life. Principles and evidences of evolution, speciation, mutation and isolation.
8. Ecology: Biotic and abi tic factor, concept of ecosystem, food chain and energy flow; adaptation of aquatic and desert faund parasitism and symbiosis, Factors causing environmental pollution and its prevention. Endangered species chronobiology and circadian rhythm.
9. Economic Zoology: beneficial and harmful insects.

#### **24. RURAL DEVELOPMENT**

The Concepts of rural sociology - social aspects of Development-rural social institutions - The organization of rural community - Tribal development - social change - Factors of social change Rural and urban disparities- Indian social problems - Agrarian relations and reforms -poverty - Unemployment & inequality - population - rural education - rural health and sanitation and rural housing.

Historical basis of rural development - Rural economics development programmes - Community Development Programme and National Extension Service -Intensive Agricultural District Programme - Intensive Area Agricultural Programme - Small Farmers Development Agency - Marginal Farmers & Agricultural Labours Development Agency - Drought Prone Area Development Programme - Hill Area & Tribal Area Development programmes - Integrated Rural Development programme National Rural Employment programme - Rural Landless Employment Guarantee Scheme - Training for Rural Self-employment Scheme-Jawahar Rozgar Yojna - Poverty Alleviation - employment generation.

Welfare programmes - Minimum Needs programme - Applied Nutrition Programme - Development of Women and Children in rural areas - New 20 point programme.

Concept of Planning - Decentralisation of planning - Regional Plan - District & Block Plan - Rural Development during plan periods.

Agriculture - Land system - Indian Agricultural Development during plan periods - Irrigation - Far Mechanisation - New Agricultural Strategy - Dry Farming - Land Reforms - Agricultural marketing Agricultural Finance - Rural indebtedness - Rural Credit Institution - Rural Regional Banks - Commercial Banks - Agricultural Development in Karnataka during Plan period.

Rural Industries - Khadhi & Village Industries (KVIC) D.I.C. Growth Centres and Rural Development - Rural transport & Communication - Rural electrification - Bio-gas programme - Social Forestry - Rural Ecology.

The role of N.G.Os in Rural Development - Rural Extension Education - Local Self-Government (Development perspectives) The concepts of Gram Swaraj - The concepts of Panchayat Raj System - Panchayat Raj Institutions - Powers & Functions - Local Finance - Panchayati Raj Legislations - Reports of the Various Committees - Rural Development Administration - Karnataka's Experiment in Panchayat Raj Institutions.

### **CO-OPERATION:**

Main features - Principles - Co-operative Credit Movement in India - Structure of Co-operative Credit agencies - NABARD - Problems of various types of Co-operative organizations - Recommendations of CRAFTCARD and Khusro Committee - Non Credit Co-operation - Structure & Progress of Consumer Co-operatives, marketing Co-operatives processing co-operatives. Dairy co-operatives and Industrial Co-operatives - State Participation in Co-operation Co-operative education in India - National level Co-operative Organisations - Growth of Co-operative movement in Karnataka.

## **25. HINDI**

### **1. HISTORY OF HINDI LANGUAGE:**

Origin and Development of Hindi Language - Evaluation of Khadi Boli Hindi as Literary Language during the 19th Century - Standardization of Hindi Language with Devanagari Script - Development of Hindi as Rashtira Bhasha during the Freedom struggle - Development of Hindi as official Language of Indian Union since Independence - Major Dialects of Hindi and their interrelationship - Significant Grammatical features of standard Hindi.

### **2. HISTORY OF HINDI LITERATURE :**

Chief Characteristics of the major periods of Hindi literatures: viz., Adikal, Bhakti kal Riti Kal Bharatendu Kal, Dwivedi Kal etc., Significant features of the main literary trends and tendencies in Modern Hindi viz., Chhayavad, Rahasya Vad, Pragati Vad, Prayog Vad, Navi Kavita, Navi Kahani, Akavita, etc. - Development of Novel in Hindi - Novelists - Premchand, Yash pal, Vrindavan Lal Varma, Jainendra, Bhagavathi Charan Varma, Bishma Sahni, Amrit Lal Nagar, Nagarjun, - A brief history of Drama in Hindi - Dramatists - Bharatendu Harischandra, Jaishankar Prasad, Hari Krishna Premi, Lakshminarayana Lal, Mohan Rakesh, Shankar Sesh - A brief History of short story in Hindi - Major story writers - Premchand, Yashpal, Sudarshan, Vishnu Prabhakar, Amrit Roy, Upendranath Ashk, Kamaleshwar Theories of Literary Criticism in Hindi - Kavya Sampraday, Ras, Chand and Alankar. Major Hindi Literary Critics - Acharya Ramachandra Shukla, Acharya Nandu Dulare Bajpayi, Acharya Hajariprasad Dwivedi, Dr. Nagendra and Dr. Namvar Singh.

### **Prescribed Text**

### **3. HINDI POETRY**

Kabir

- Kabir Granthavali

- Ed. Shyam Sundar Das  
(First 100 poems)
- Surdhas - Bhramara Geet Saar  
Ed. Acharya Ramachandra Shukla.  
(100 Poems from *the beginning*)
- Tulasidas - Ramacharit Manas  
(Ayodhya Kand only)
- Maithili Sharan Gupta - Saket  
(Pratham and Navam Sargas only)
- Jaishankar Prasad - Kamayani  
(Chinta & Shradha Sarg)
- Suryakant Tripathi Nirala - Raag Viraag  
Ed. Dr. Ramavilas Sharma  
(Introduction and first 15 poems only)
- Ajney - Kitni Navan Main Kitni Bar.  
(First 10 Poems only)
- Naresh Mehta - Samshay Ki Ek Rat

#### 4. HINDI PROSE

- Bharatendu Harischandra - Andhar Nagari
- Premchand - Godan
- Mohan Rakesh - Lahron Ka Rajhans.
- Katha Sankalan - Katha Vithi - Ed. Dr. Premnarayana shukla
- Ramachandra - Shukla Chitamani  
(Pahila Bhag (10 Essays from the beginning))
- Mahadevi Varma - Pathke Saathi

#### 26. ANTHROPOLOGY.

1. Nature, definition and scope of anthropology, its branches, Concepts, Culture, Society, Community, group and institutions.
2. Evaluation Lamarckism, Darwinism, Synthetic theory; Man and apes. Stages of Human Evolutions Austrlopithecines, Home Erecuts. and Neanderthals.  
Anthropological perspectives on Human Genetics: -Mendel's law of heredity and its application to Man.  
Concept of race, criteria of racial classification . Major races of World, Racism.
3. Social Institutions: Family - Forms and Function Marriage - Forms and Universality, Marriage payments Kinship - Descent,

Descent, residence, terminology and usages economy - types, forms of exchange - Debate between formalists and substantivists.

State and stateless political systems, Sources of power and authority. Law in simple and complex societies. Anthropology and law.

Religion, Magic, Science and theories of origin of religion: -nature - Spirit complex.

Internal and External factors of change. Spontaneous and Directed change - Agents of change -Acculturation, Westernisation, Modernisation and Sanskritisation.

Field work traditions in Anthropology, approaches and tools.

Palaeolithic, Mesolithic, Neolithic cultures and Megaliths Methods of dating and the Great Ice Age. Urban Revolution and early cities.

Language and culture, Phonetics, Phonemics and syntax, Major linguistic families of the world, Ethnography of communications and Sapir-whorf hypothesis.

#### 4. Indian Society and Basis of Indian Social System:

'Varna', 'Jati', Varnashrama Dharma, Indian Tribes and their Ethnographic background, Geographic, Racial and Linguistic distribution of Tribals in India.

Nomadic and Settled Tribes, Tribes and their specific problems. Tribal Administration and Welfares, Plans & Programmes. Historical and Contemporary trends. Issues relating to National integration, Constitutional provisions and safeguard for the welfare of Scheduled Castes and Scheduled Tribes.

### **27. URDU**

#### **SYLLABUS**

##### **I. HISTORY OF LANGUAGE**

1. Theories of origin of Urdu
2. Dialects of Maghribi Hindi
3. Relationship of Urdu to Maghribi Hindi

##### **II. HISTORY OF LITERATURE ;**

1. DAKHANT PERIOD:
  1. Significant features of Adil Shahi & Qutb Shahi Literature
  2. Contribution of the following poets : Nizami Bideri, Mohamed Quli Qutb shahw Ajhi, Ione, Nashati, Nusrati, Gawwasi
  3. Distinctive features of the following works Sabras; Kadam Rao, Padam Rao, Qutb Mushtari, Meena Satwanti and phoolban.

##### **2. POETRY:**

- i. Distinctive features of Gazal., Qasida, Marsia, Masnavi and Rubai
- ii. Study of the life & Contribution of the following poets:

Mir Taqi Mir, Mirza ghalib, Nazir Akbar baadi' Dr. Muhammad Iqbal, Josh Malihabadi and Faiz Ahmed Faiz.

- iii. Study of distinctive features of the following works: Sihrid Bayan, Dewane - Ghalio, Musaddase Hali, Intekhabe azir Akbar abadi, Jntekabe Josh, Bange Diraand Daste Saba.

### **3. PROSE & DRAMA :**

- i. Distinctive features of Dastaan , Novel, Short story and Drama.
  - ii. Study of the life & contribution of the following Writers: Dr. Nazir Ahmed, Sir Syad, Altaf Hussain Hali, Moulvi Abdul Huq, Premcand, Patras, Rajinder Singh Bedi, Krishaf Chander, Ismat Chughtai.
  - iii. Study of the distinctive features of the following works:' Yadgere Ghalib, Bagho Bahar, Miratual - Aroos, Nirmala, Anarhali, Umrah Jan ada, Patras Ke Mazameene, Urdu Ke Tere Afsane.
- III. Movements: Significant features of Sir Syed Movement. Life & Contribution of Sir Syed, Intekhabe Mazameene Sir Syed.

## 28. ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

### ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ

1. ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಸ್ವರೂಪ, ಉದ್ದೇಶ ಮತ್ತು ಪ್ರಯೋಜನ

2. ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಅಧ್ಯಯನ ಕ್ರಮಗಳು

3. ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಾಚೀನತೆ

4. ರಾಜಾಶ್ರಯ ಮತ್ತು ಕನ್ನಡ ಸಾಹಿತ್ಯ

(ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಬೆಳವಣಿಗೆಗೆ ಕರ್ನಾಟಕ ಪ್ರಮುಖ ಆರಸರ ಮನೆತನಗಳು ನೀಡಿದ ಪ್ರೋತ್ಸಾಹ)

5. ಧರ್ಮ ಹಾಗೂ ಕನ್ನಡ ಸಾಹಿತ್ಯ

(ಕರ್ನಾಟಕ ಪ್ರಮುಖ ಧರ್ಮಗಳ ಬೆಳವಣಿಗೆಯಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಾಹಿತ್ಯದ ಬೆಳವಣಿಗೆಯಲ್ಲಿ ಧರ್ಮ ನಿರ್ವಹಿಸಿದ ಪಾತ್ರ)

6. ಹತ್ತನೆಯ ಶತಮಾನದ ಸಾಹಿತ್ಯದ ಪ್ರಮುಖ ಲಕ್ಷಣಗಳು-ಚಂಪೂ ಪರಂಪರೆ, ನೃಪತುಂಗ, ಪಂಪ, ರನ್ನ, ಜನ್ನ, ನಾಗವರ್ಮ-II ಇವರುಗಳ ಕೊಡುಗೆ, ಈ ಕಾಲದ ಗದ್ಯ ಕೃತಿಗಳು - ವಡ್ಡಾರಾಧನೆ, ಚಾವುಂಡರಾಯ ಪುರಾಣ.

7. ಮಧ್ಯಕಾಲೀನ ಸಾಹಿತ್ಯದ ವೈಲಕ್ಷಣ್ಯಗಳು

ವಚನ, ರಗಳೆ, ಷಟ್ಪದಿ, ಸಾಂಗತ್ಯ, ತ್ರಿಪದಿ-ಈ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳ ಅಧ್ಯಯನ ಪ್ರಮುಖ ವಚನಕಾರರು : ದೇವರ ದಾಸಿಮಯ್ಯ, ಬಸವಣ್ಣ, ಪ್ರಭು, ಅಕ್ಕ, ಅಂಬಿಗರ ಚೌಡಯ್ಯ, ರಗಳೆಯ ಕವಿಯಾಗಿ ಹರಿಹರ.

ಷಟ್ಪದಿ ಪ್ರಕಾರದ ಪ್ರಮುಖ ಕವಿಗಳು : ರಾಘವಾಂಕ, ಚಾಮರಸ, ಕುಮಾರವ್ಯಾಸ, ಲಕ್ಷ್ಮೀಶ ಸಾಂಗತ್ಯ ಹಾಗೂ ತ್ರಿಪದಿ ಪ್ರಕಾರದ ಪ್ರಮುಖ ಕವಿಗಳು : ರತ್ನಾಕರವರ್ಣಿ, ಹೊನ್ನಮ್ಮ, ನಂಜುಂಡ, ಸರ್ವಜ್ಞ.

8. ಹೊಸ ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಅರುಣೋದಯ : ಕೆಂಪು ನಾರಾಯಣ, ಮುದ್ದಣ್ಣ

9. ಹೊಸ ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಮುಖ ಘಟ್ಟಗಳು : ನವೋದಯ, ಪ್ರಗತಿಶೀಲ, ನವ್ಯ, ನವೋತ್ತರ

10. ಹೊಸ ಕನ್ನಡ ಸಾಹಿತ್ಯದ ವಿವಿಧ ಪ್ರಕಾರಗಳು ಹಾಗೂ ಅವುಗಳ ಕೊಡುಗೆಗಳು

### ಸಂದರ್ಭ ಗ್ರಂಥಗಳು

1. ಕರ್ನಾಟಕ ಕವಿಚರಿತೆ - ಸಂಪುಟ 1,2,3

2. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ - ರಂ. ಶ್ರೀ ಮುಗಳ

3. ಸಾಮಾನ್ಯನಿಗೆ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಸಂ) ಡಾ. ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ, ಡಾ. ಎಂ. ಚಿದಾನಂದಮೂರ್ತಿ

4. ಸಮಗ್ರ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ) ಸಂಪುಟ 1 ರಿಂದ 6

5. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ - ಸಂಪುಟ 1 ರಿಂದ 4 (ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ)

## ಕನ್ನಡ ಭಾಷೆಯ ಚರಿತ್ರೆ ಮತ್ತು ವ್ಯಾಕರಣ

ಭಾಷೆಯ ಲಕ್ಷಣಗಳು ಮತ್ತು ವ್ಯಾಖ್ಯಾನಗಳು - ಭಾಷಾ ಚರಿತ್ರೆಯ ಉದ್ದೇಶ ಮತ್ತು ವ್ಯಾಪ್ತಿ ಭಾರತೀಯ ಭಾಷೆಗಳು ವರ್ಗೀಕರಣ ದ್ರಾವಿಡ ಭಾಷಾ ಕುಟುಂಬ - ಉತ್ತರ ದ್ರಾವಿಡ ಮತ್ತು ದಕ್ಷಿಣ ದ್ರಾವಿಡ

ಪರಿಷ್ಕೃತ (cultivated) ಮತ್ತು ಅಪರಿಷ್ಕೃತ (uncultivated)

ಭಾಷೆಗಳು - ಕನ್ನಡ ಭಾಷೆಯ ಪ್ರಾಚೀನತೆ

ಕನ್ನಡ ಭಾಷೆಯ ಪ್ರಾಚೀನ ವೈಯ್ಯಾಕರಣರು - ಕನ್ನಡ ವ್ಯಾಕರಣದ ವಿಶೇಷಾಂಕಗಳು

(ದ್ರಾವಿಡ ಭಾಷಾ ವರ್ಗ ಹಾಗೂ ಸಂಸ್ಕೃತದೊಡನೆ ತೌಲನಿಕವಾಗಿ) ಲಿಂಗ, ವಚನ, ವಿಭಕ್ತಿ, ಸರ್ವನಾಮ ಮತ್ತು ಕ್ರಿಯಾಪದ ಪ್ರಭೇದಗಳು

ಕನ್ನಡ ಬೆಳವಣಿಗೆಯ ಪ್ರಮುಖ ಬೆಟ್ಟಗಳು - ಉಪ ಭಾಷೆ ಮತ್ತು ಭಾಷಾ ಪ್ರಭೇದಗಳು - ಕನ್ನಡದ ಉಪ ಭಾಷೆಗಳು ಮತ್ತು ಭೌಗೋಳಿಕ, ಸಾಮಾಜಿಕ ಪ್ರಭೇದಗಳು ಶಿಷ್ಟ ಮತ್ತು ಗ್ರಾಮ್ಯ ಪ್ರಯೋಗಗಳು. ಗ್ರಾಂಥಿಕ ಮತ್ತು ಆಡುನುಡಿಯ ಶೈಲಿ ಇತ್ಯಾದಿ.

## ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. ಕನ್ನಡ ಕೈಪಿಡಿ - ಭಾಗ-1        | ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಪ್ರಕಟಣೆ |
| 2. History of Kannada Language | R. Narasimhachar               |
| 3. ಕನ್ನಡ ವಾಕ್ಯಗಳು              | ಡಿ.ಎನ್. ಶಂಕರಭಟ್ಟ               |
| 4. ಕನ್ನಡ ಭಾಷಾ ವ್ಯಾಸಂಗ          | ಡಾ. ಸಂಗಮೇಶ್ ಸವದತ್ತೀಮಠ          |
| 5. ಭಾಷಾ ವಿಜ್ಞಾನದ ಮೂಲ ತತ್ವಗಳು   | ಡಾ. ಎಂ.ಚಿದಾನಂದಮೂರ್ತಿ           |

## ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ

1. ಸಾಹಿತ್ಯದ ಅರ್ಥ ವಿವರಣೆ, ಸ್ವರೂಪ ಮತ್ತು ವ್ಯಾಪ್ತಿ
2. ಕಾವ್ಯ ಮತ್ತು ಶಾಸ್ತ್ರ : ಇವೆರಡರ ಸಂಬಂಧ ಮತ್ತು ವ್ಯತ್ಯಾಸ.
3. ಸಾಹಿತ್ಯಕ್ಕೆ ಜೀವನದೊಂದಿಗೆ, ಸಮಾಜದೊಂದಿಗೆ, ಧರ್ಮ ನೀತಿ, ತತ್ವ ವಿಜ್ಞಾನ ಇವುಗಳೊಂದಿಗೆ ಇರುವ ಸಂಬಂಧ.
4. ಕಾವ್ಯ ಕಾರಣಗಳು : ಪ್ರತಿಭೆ ಮತ್ತು ವೃತ್ತಿ ಇವುಗಳ ವಿಚಾರ.



5. ಕವಿ, ಸಹೃದಯ ಮತ್ತು ವಿಮರ್ಶಕ.

6. ಕಾವ್ಯ ಪ್ರಯೋಜನಗಳು ಮತ್ತು ಕಾವ್ಯದ ಗುರಿ.

7. ಅಲಂಕಾರ ಶಾಸ್ತ್ರದ ಕೆಲವು ಪಾರಿಭಾಷಿಕ ಪದಗಳು ಮತ್ತು ಅವುಗಳ ಅರ್ಥವ್ಯಾಪ್ತಿಯ ಸ್ತೂಲ ಪರಿಚಯ.

ಅ) ಅಲಂಕಾರ ಆ) ರೀತಿ - ಶೈಲಿ ಇ) ರಸ ಈ) ಧ್ವನಿ ಉ) ಔಚಿತ್ಯ ಊ) ಸ್ವಭಾವೋಕ್ತಿ

ಎ) ವಕ್ರೋಕ್ತಿ ಐ) ಗುಣ-ದೋಷ

8. ಕೆಲವು ಅಲಂಕಾರಗಳು ಪರಿಚಯ :

ಅ) ಶಬ್ದಾಲಂಕಾರಗಳು ಆ) ಅರ್ಥಾಲಂಕಾರಗಳು ಉಪಮೆ - ರೂಪಕ\* - ದೀಪಕ ಉತ್ಪೇಕ್ಷೆ - ಅರ್ಥಾಂತರನ್ಯಾಸ

9. ಕಾವ್ಯ ಲಕ್ಷಣಗಳು

10. ವಿಮರ್ಶೆ : ಅರ್ಥ ವಿವರಣೆ, ಕಾರ್ಯ, ಕಾರಣ, ಪ್ರಯೋಜನ ಹಾಗೂ ವ್ಯಾಪ್ತಿ

11. ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಸಾಹಿತ್ಯ ಪ್ರವೇಶ : ಮೂಲ : ಅಡ್ಲೆನ್ : ಅನುವಾದ : ಸಿ.ಪಿ.ಕೆ.

2. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ : ತಿ.ನಂ. ಶ್ರೀಕಂಠಯ್ಯ

3. ವಿಮರ್ಶೆಯ ಪೂರ್ವ ಮತ್ತು ಪಶ್ಚಿಮ : ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ

4. ಕನ್ನಡ ಕೈಪಿಡಿ : ಅಲಂಕಾರ ಶಾಸ್ತ್ರಭಾಗ

5. ಕಾವ್ಯಾರ್ಥ ಪದಕೋಶ : ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ ಮತ್ತು

ಕೆ.ವಿ. ನಾರಾಯಣಪ್ಪ

6. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ : ಓ.ಎಲ್. ನಾಗಭೂಷಣಸ್ವಾಮಿ

## 29. ENGLISH

The paper for preliminary by examination in English will consist of objective type questions geared to test the candidates' familiarity with major periods and authors of English literature from the Elizabethan to the Modern. Though the paper does not aim to test an indepth or detailed analysis of texts and their period, it expects an elementary knowledge of authors and their works including the age they represent listed in Appendix (I).

In addition to this list, the paper will also test the candidates' general knowledge of prominent writers and their works in Indian writing in English. Also, the candidates are expected to be familiar with key critical and literary terms and able to identify common figures of speech and various literary geares.

# APPENDIX - I

## ENGLISH - (PRELIMINARY)

### *Poetry and Drama*

William Shakespeare

John Milton

Alexander Pope

John Donne

Andrew Marvell

William Blake

Wordsworth

Coleridge

John Keats

Shelley

Tennyson

Browning

Yeats

T.S. Eliot

As you like it, The Tempest, Hamlet.

Lycidas On his Blindness.

Rape of the lock

"Sweetest love, I do not go" "Sunne Rising"

To his Coy Mistress.

The Tiger, The little Black Boy

The Prelude (Book II) Lucy poems.

The Ancient Mariner Kubla Khan

The Eve of St. Agnes. Ode On a Grecian Urn

"Ode to the West Wind" To the Skylark

The Lotus Eaters. - -

The last Ride together

Easter 1916

The Second Coming Sailing to

Byzantium Leda and the Swan.

The waste Land.

### PROSE

Dream Children New Year's Eve

David Copperfield

Middlemarch

Jude, the Obscure.

Ennna

The Rainbow

### CRITICISM

Extracts from 'Poetics' dealing with Tragedy and

Study of Poetry

Preface to Lyrical Ballads

Tradition and Individual Talent

Lamb

Dickens

George Eliot

Thomas Hardy

Jane Auston

D.H. Lawrence

Aristotle

Comedy.

Mathew Arnold

Words Worth

T.S. Eliot

## 30. MANAGEMENT

### 1. PRINCIPLES OF MANAGEMENT & BEHAVIOURAL PROCESS

The concept of management - the functions of management - Schools of management and development of management theory and principles.

|                                       |   |
|---------------------------------------|---|
| Planning                              | Planning process, planning premises, decision making types of planning.   |
| Organising                            | Principles of Organisation - Span of management - departmentation - authority<br>relationship - types of organization - managerial hierarchy. |
| Staffing                              | Selection of personnel - development and training of personnel - appraisal of personnel - promotion.  |
| Directing                             | nature of direction - leadership - motivation-supervision - communication co-ordination-morale - discipline,                                  |
| Control                               | Process of control- control techniques and tools, control of overall performance - performance appraisal.                                     |
| Modern trends in Management in action | Management by objectives, participative Management - Management Grid.   |
| Interpersonal behaviour               | personality, perception, learning, attitudes.   |
| Interpersonal behaviour               | group dynamics, conflict, power and policy.   |
| Organisational behaviour              | internal organizations, organizational culture, organizational change and development.  |

### 2. FINANCIAL MANAGEMENT :

|                            |   |
|----------------------------|---|
| Financial function         | : in business. scope, goals - relation of finance with other business functions.                              |
| Capital; Budgetting        | : different techniques - Capital Auctioning   |
| Instruments of Finance     | : Equity and preference shares debentures.  |
| Cost of Capital            | : Cost of dept, cost of preference share capital, cost of equity. aggregate weighted average cost of capital. |
| Capital Structure          | : optimum capital structure - determinants financial leverage -   |
| and significance.          |   |
| Sources of finance         | : Financial institutions - IDBI. IFC. ICICI, SFCS. Commercial banks.  |
| Working capital management | : Cash, securities, receivables and inventory management, Working Capital finance.                            |

Dividend policy and decisions : Influencing factors - forms of dividend theories of dividend policy.

### **3. MARKETING MANAGEMENT :**

Marketing concepts, approaches to the study of marketing. marketing functions, types of markets, rural marketing.

Consumer behaviour - determinants of buyer behaviour - buying process market segmentation and targeting.

Product planning and process - Product life cycle concept - product positioning strategy, product diversification strategy-branding and packaging.

Pricing policies and practices - pricing objectives - methods of pricing.

Promotional strategies - promotion mix-advertising management - forecasting sales promotion; objectives and programmes.

Distribution strategies; factors affecting the choice of a channel- major channels of distribution for consumer and industrial goods - channel management - Indian distribution system - channel conflict.

Marketing information system - marketing research - scope and areas of applications.

Marketing and society - social criticisms of marketing - marketing audit.

### **4. HUMAN RESOURCE MANAGEMENT:**

Human resource planning, recruitment and selection of best candidates orienting and training new lines to be placed in the proper jobs, continuing to develop employees over their careers, appraising their performance, compensating them, managing employees concerns in both union and non-union situations and assessing the performance of the entire system.

### **5. BUSINESS MATHEMATICS & STATISTICS**

Numbers - natural numbers - zero - HCF - & LCM.

Theory of Indices - Laws of Indices.

Logarithms - Logarithm of a number - properties of logarithms.

Permutation and combination.

Matrices and determinants -Matrasin, Types - determinant of square matrix (including evaluation using sarul diagrams) linear equations in two variables using Grames Rules cross multiplication method & Matrix methods.

Ratios - Types- Preparations - Properties.

Commercial Arithmetic - Percentages - Simple & Compound Int-annuities - Bill discounting.

Introduction - Collection of Tabulation of Data.

Diagrammatic Representation - Graphic - Diagrammatic Representation.

Measures of Averages.

Measures of dispersion - range - Quartive Deviation

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