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KAS-GP Pre-cum-Mains Syllabus

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KAS Prelims Syllabus

The Karnatka Recruitment of KAS - Gazetted Probationers exam consists of two stages:

1. **Preliminary exam** will be conducted to select candidates for Main Examination, and
2. **Main examination** and **Personality test** will be conducted to select candidates for various services.

Preliminary Examination: It consists two papers. Each paper carrying 100 questions with each question carrying two marks, each paper shall be of a maximum of 200 marks and of a duration of two hours (Total for two papers 400 marks) in the following description, namely;

S.L	Subject	No. of Question	Marks
Paper-1			
1	General studies related to National and International importance	40	80
2	Humanities	60	120
	Total	**100**	**200**
Paper-2			
1	General studies related to State importance	40	80
2	General Science & Technology Environment & Ecology	30	60
3	General Mental Ability	30	60
	Total	**100**	**200**

Paper	KAS Prelims Syllabus
Paper-I	1. Current events of National and International importance. 2. Humanities – History of India – Emphasis shall be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on Indian national movement with special emphasis on Karnataka. 3. World Geography and Geography of India with a focus on Karnataka. 4. Indian polity and economy, including the country's political system, rural development, planning and economic reforms in India - sustainable development, poverty alleviation, demographics, social sector initiatives etc.
Paper-II	1. Current events of State importance and important State Government programmes. 2. General Science & Technology, Environment & Ecology-contemporary developments in science and technology and their implications including matters of everyday observations and experience, as may be expected of a well educated person who has not made a special study of any scientific discipline general issues on Health, environmental ecology, biodiversity and climate change that do not require subject specialization. **3.** General Mental Ability,- Comprehension, Logical reasoning and Analytical ability, Decision making, problem solving, Basic innumeracy (numbers and their relations, order of magnitude etc.,) and data interpretation (charts, graphs, tables, data sufficiency etc., (class X/SSLC level).

BOOK LIST FOR KAS PRELIMS

CURRENT AFFAIRS:

Must Read Papers:

1. The Hindu Newspaper
2. Current Affairs Material by India4IAS
3. A Monthly Magazine
4. Karnataka Economic Survey (Current Year)

HISTORY AND HERITAGE:

Must Read Books:

1. Ancient India: Class 11th NCERT (Old) by R.S. Sharma (Now being published by Oxford India)
2. Medieval India: Class 11th NCERT (Old) by Satish Chandra (Now being published by Orient Black Swan)
3. Modern India: Class 12th NCERT (Old) by Bipin Chandra (Now being published by Orient Black Swan)
4. Class 11th NCERT (New) – An Introduction to Indian Art
5. Spectrum's A Brief History of Modern India by Rajiv Ahir
6. Karnataka History – A brief History of Karnataka by SuryanathKamath

Reference Books -

1. Modern India – Bipin Chandra

GEOGRAPHY

Must Read Books:

1. Class 6th to 12th NCERT (New)
2. Karnataka Geography –Dr. Ranganath
3. Certificate Physical and Human Geography by Goh Cheng Leong

Atlas: The Orient Blackswan School Atlas or Oxford School Atlas

ECONOMY:

Must Read Books:

1. Class 9th to 12th NCERT (New)
2. Indian Economy key Concepts by Sankar Ganesh K.

Reference Books: Indian Economy by Ramesh Singh (TMH Publications)

INDIAN POLITY:

Must Read Books:

1. Class 6th to 11th NCERT (New)
2. Indian Polity by M.Laxmikanth (TMH Publications, 5th Edition)

Reference Books: Our Parliament by Subhash Kashyap (NBT)

SCIENCE & TECHNOLOGY, ENVIRONMENTAL SCIENCE:

Must Read Books:

1. Class 6th to 10th Science NCERT (new)

Reference Book: Science and Technology – TMH Publication

ENVIRONMENT & ECOLOGY:

Must Read Books:

1. Class 12 NCERT – UNIT-X (Chapter 13 – 16).

MENTAL ABILITY:

Must Read Books:

1. Mental Ability - R S Agarwal

MUST READ: A HAND BOOK OF KARNATAKA (CURRENT EDITION)

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KAS Mains Syllabus

Main Examination: The Main Examination shall consist of written examination and Personality Test.

Qualifying Paper-I	Kannada	150 Marks	2 Hours
Qualifying Paper-II	English	150 Marks	2 Hours

Papers	No.of Sections	Marks per Section	Total Marks per paper	Duration
Paper-1: Essay Two Essays (in Kannada/English) Essay – 1: Topics of International / National Importance, Essay – 2: Topic of State Importance / Local Importance	Two Essays	125 each essay	250	3hrs
Paper-II: General Studies-1 1. History & Cultural Heritage (India and karnataka) 2. Social and Political Perspective 3. Indian Economy – Planning - Rural Development – Data Collection-Analysis-Interpretation	Three Sections	80/85	250	3hrs
Paper-III: General Studies-2 1. Physical Features and Natural Resources 2. Overview of Indian Constitution 3. Public Administration and Management-International Relations	Three Sections	80/85	250	3hrs
Paper-IV: General Studies-3 1. Role and Impact of Science and Technology in Development of Indian, Information Technology In Public Domain 2. Advancement and Modern Trends in Natural Sciences, Life Sciences, Agricultural Science, Health and Hygiene 3. Challenges and Issues of Development on Environment & Ecology	Three Sections	80/85	250	3hrs
Paper-V: General Studies-4 1. Ethics 2. Integrity 3. Aptitude	Three Sections	80/85	250	3hrs
		Written Exam Total Marks	**1250**	
		Personality Test	**50**	
		Grand Total Marks	**1300**	

Qualifying Papers: The aim of the paerers is to test the candidates's ability to read and understand serious distructive prose and to express his ideas clearly and correctly in Kannada and English. The pattern of questions would be brodly as follows:

Qualifying Kannada Paper-I: General Kannada

1. ವಿಷಯದ ಸಮಗ್ರ ಅರ್ಥೈಸುವಿಕೆ –25 ಅಂಕಗಳು
2. ಪದ ಪ್ರಯೋಗ –25 ಅಂಕಗಳು
3. ವಿಷಯ ಸಂಕ್ಷೇಪಣೆ –25 ಅಂಕಗಳು
4. ಪದಜ್ಞಾನ –25 ಅಂಕಗಳು
5. ಲಘು ಪ್ರಬಂಧ –25 ಅಂಕಗಳು
6. ಇಂಗ್ಲೀಷಿನಿಂದ ಕನ್ನಡಕ್ಕೆ ಭಾಷಾಂತರ –25 ಅಂಕಗಳು

Qualifying English Paper-II: General English

1. Compreshension of given passages - 25 Marks
2. Precise writing - 25 Marks
3. Usage - 25 Marks
4. Vocabulary - 25 Marks
5. Short Essay - 25 Marks
6. Communication Skills - 25 Marks

Paper-1: Essay Paper

Two Essays (in Kannada/English Language)
Essay – 1: Topics of International / National Importance,
Essay – 2: Topic of State Importance / Local Importance

PAPER-II: General Studies-1

Section-I : History and Cultural Heritage (India & Karnataka) - (6 Units)
Unit 1: Cultural Heritage of India (select areas and topics)

1. **Indus Civilization-**Distinction between Indus Civilization and Vedic Civilization– Evolution of Varna, Jathi/caste system – Religious condition – emergence of religious movements.
2. **Literature-** Sanskrit Literature (Ancient) : Vedic Literature, the epics and the Puranas: their impact on the life and culture of the Indian People; Prose works on polity, ethics (neeti), popular stories and Pancha Tantra (only important works); Mughal contributions to literature.
3. **Science and Technology-** Mathematics, Astronomy, Physics, Chemistry, Botany, Zoology, Physiology and Medicine (including Surgery), Ship-building, Mining and Metallurgy, Engineering and Architecture.
4. **Arts (Excluding Karnataka)-** The Maurya and Gupta periods; The Khajuraho temples; Jain temples at Mount Abu and the Odishyan temples; Pallava, Chola and Pandyan contributions. The Mughal architecture; Cathedral architecture: Bom Jesus-Old Goa, St. Paul's- Kolkata and St. Thomas- Chennai. Painting : Ajanta frescoes; Mughal and Rajput

schools of painting. Dance and Music: Classical music and dance; Mughal contributions to music. Folk arts of India.

5. **India's cultural contributions to the outside world**- Central Asia, China, Japan, South-East Asia and Sri Lanka.
6. **Religions of India-**
   (i) **Hindu Dharma:** General characteristics and some common beliefs – Purusharthas– rituals and ethics – festivals and sacred days – pilgrimage and fairs. Hindu sects: Hinduism as a federation of various sects – Shaiva, Vaishnava and Shakta. Philosophy of the Upanishad and the BhagavadGita – Yoga Philosophy of Pathanjali.
   (ii) **Jainism:** Principles – Ratnatraya, code of morals, Equality (samana), Ahimsa,. Sects: Digambara and Swethambara.
   (iii) **Buddhism:** Principles – Four noble truths, The Eight – fold path, Nirvana, Moral doctrines. Sects: Hinayana and Mahayana
   (iv) **Christianity:** Teachings of Jesus Christ. Christian doctrines and theology. Groups in Christianity – The Roman Catholic Church, the Eastern orthodox churches and the Protestants churches. Missionary activities in India
   (v) **Islam:** Principles and practices – God, Confession of Faith, Five "Pillars of Islam", sacred places and days, the family system and the shariah, Sufis of Karnataka, Sects: Shia and Sunni.
   (vi) **Sikhism:** Principles and practices and its Evolution.

Unit 2 : Toward transforming Indian Society : Major schools of thought.

Modern Indian History – from the beginning of 19th Century, Reforms and Reformers,

1. Eradication of Social and religious wrongs
2. The Vedas for all – The Casteless society
3. Ideal of service
4. Emancipation of the Depressed class
5. "Two-Nation" theory and Islamic revivalism
6. Empowerment of the Depressed class through religion and education
7. Hindutva and Patriotism
8. The Dravida Movement
9. Struggle for emancipation of Dalits and their empowerment
10. Socialist approach and Total Revolution
11. Gram Swaraj, Satyagraha and Bhoodana

Unit 3 : From Kadambas to the Hoysalas.

(i) Antiquity of Karnataka; Kannada language and literature; Extent of Kannadanadu; State and District Gazetteers; Museums and Archives in Karnataka; Preservation and protection of historical monuments – work of Archaeological Survey of India – World Heritage Sites in Karnataka.

(ii) From Kadambas to the Hoysalas : Contributions to Architecture, sculpture, literature and religion.

Unit 4 : The Vijayanagara Empire and thereafter (1336-1799).

(i) Vijayanagara Empire: Origin, aims and aspiration of the Empire – Vidyaranya. Political history : Harihara, Bukka, Immadi Devaraya, Krishnadevaraya and Aliya Ramaraya – The battle of Talikote and its consequences. Glory of the capital – Administration – Society, economy and religion; Arts: Painting; Music, Dance, Literature, Architecture and Sculpture; Foreign accounts of Vijayanagara.

(ii) Religious sects: Shankaracharya, Ramanujacharya, Madhwacharya – Sri Basaveshvara, Veerashaivism and Vachana movement – Haridasa movement – Kalamukha, Shakta and Pashupatha sects.

(iii) The Bahman Shahis : Mahamud Gawan - Contributions of the Bahamani – Adil Shahis of Bijapur: Contributions to literature and architecture – Sufis in Karnataka.

(iv) Chikkadevaraja Wodeyar – Contributions; The Nayakas of Keladi and Chitradurga; Rani Chennamma & Sangolli Rayanna of Kittur, The Yalahanka Nadaprabhu; Hyder Ali and Tippu Sultan (1761-1799).

Unit 5 : Modern Mysore (1799-1947).

(i) Krishna raja Wodeyar lll – his contributions;

(ii) Armed rebellion in Karnataka against the British in Karnataka

(iii) Commissioner's Rule (1831-1881)

(iv) Nizam's rule in Hyderabad – Karnataka

(v) Progress of Mysore under the Dewans.

Unit 6 : Freedom Movement in Karnataka and Unification (1885-1956).

(i) Rise of Nationalism; Pre-Gandhian era (1885-1920); Gandhian era (1920-1948).

(ii) Freedom movement in Hyderabad – Karnataka

(iii) Important personalities in Freedom Struggle.

(iv) Unification of Karnataka; Causes for the rise of unification movement – Alur Venkatrao – Role of literacy, cultural associations and print media – Three stages in the unification of Karnataka (1947-1956).

(v) Social and Cultural developments: Spread of education by missionary and voluntary bodies – printing and the press – Literary and Scholarly studies – New literary genres in kannada literature – Backward Class movement – Miller Committee Report, Folk arts of Karnataka.

Section II - Social and Political Perspective - (7 units)

1. **Post Independent Karnataka –** Towards Political Consolidation – Attempts of Successive Governments – Backward Classes and Social Justice – Reports of : Havnur Committee - Venkataswamy Committee – Chinnappa Reddy Committee – Recent Trends – Dalit Movement – Devaraja Urs and Land Reforms. Language Issue: Gokak Movement – Issues and Perspectives. Inter-State Disputes - Boundary Disputes – Mahajan Committee Report and its impact – Water Disputes - Farmer's Movement, Regional Imbalance & Nanjundappa committee Report.
2. **Social Change and Movements –** Social structure and social change, Theories of Social Change, Social Disorganisation and Social movements, directed social change, social policy and social development.
3. **Social Change and Modernisation -** Problems of role conflict – intergenerational gap, youth unrest & commercialization of education, emergence of India as Educational Force - changing status of women and social movements, industrialization and

urbanization, role of pressure groups, Sanskritisation, westernisation and modernization - Modernism versus traditionalism. Current social evils – fundamentalism and terrorism, Naxalism, Nepotism, corruption, and black money.

4. **Government and Political System –** Legislature, Executive and Judiciary, functioning of democratic political system in a traditional society, political party and their social composition.
5. **Decentralisation of power –** Decentralisation of power and political participation. Union Government, Parliament, Cabinet, Supreme court, Judicial review, Center-State relations, State government, role of Governor, Panchayathi raj, class and caste in Indian politics, politics of regionalism, linguism, andcommunalism. Problems of secularisation policy and national integration, Political participation & voting, vote bank politics.
6. **Socio Economic System –** The Jajmani system and its bearing on traditional society. Market Economy and its social consequences, Occupational diversification and social structure, Profession and professionalisation, role of trade unions, social determinants and consequence of economical development, economic inequalities, exploitation and corruption, Globalisation and its social impact.
7. **Rural Social system and Rural Development –** Socio cultural dimensions of village community, traditional power structure, democratization and leadership, poverty, indebtedness, bonded labour, social consequences of land reforms, Rural development projects, green revolution, new strategies of rural development, the changing rural scene.

Section III – Indian Economy – Planning- Rural Development (8 units)

1. **Indian Economy –** Post independence growth - experience of agriculture, industry and tertiary sectors, growth and distributive justice. Poverty and inequality, Growth of Karnataka Economy during the plan era, growth and sectoral changes and linkages in the State Economy.
2. **India and International economic relations–** Growth and trade – volume, composition and direction of exports and imports, domestic and foreign capital in economic development, changes in India's foreign trade policy, balance of payments and foreign exchange. Karnataka's exports – volume, composition, and direction.
3. **Development patterns** and disparities among regions and between rural and urban areas, public policies to mitigate disparities, prospects and problems of Special economic zones. Development disparities in Karnataka and public policies, Redressel of development disparities. Regional development boards.
4. **Planning – Planning goals,** objectives and approaches, achievements and failures of five year plans (I to VII Five year plans). Development plans under the new economic policies regime (VIII Five year plan onwards). Planning in Karnataka.
5. **Decentralization** – pros and cons of top-down planning and bottom-up planning, planning mechanism and experience in Panchayathi raj institutions, planning and capacity building, planning and financing. Decentralized planning in Karnataka, Resource mobilization and devolution. District Planning Committee, State finances and local finances. State finance commission.

6. **Rural Development** – Importance of agriculture in the national economy, Gandhian approach to rural development and land reforms, size of farms and productivity, problems of irrigation and dry land farming, food security, rural credit, agricultural marketing, agricultural labour, rural industries and employment. Agricultural problems in Karnataka, Rural Economic infrastructure (Energy, Irrigation, Transport, Communication, Markets), Rural Social Infrastructure - Housing, Drinking water, Sanitation & Drainage, Rural Health systems and their delivery. Development of Economic and Social infrastructure in Karnataka, Rural markets in Karnataka. Rural housing and health care schemes in Karnataka.
7. **Rural Development Initiatives** – Poverty Alleviation-cum-Employment generation Programmes, Five Year Plan and inclusive growth, rural financial institutions, Development and conservation of common property resources in rural areas – village grasslands and woods, water bodies, Provision of urban amenities in rural areas (PURA). Rural Development schemes in Karnataka, self help groups and micro finance institutions in Karnataka, External assistance for rural tank rejuvenation, drinking water, sanitation and health care in Karnataka.
8. **Data Collection Analysis**- Interpretation- Collection, Interpretat ion and Appreciation of Statistical Data- Study of Graphs and Charts:– Bar Graphs, Line Graphs and Pie Charts- Problems Based on Tabular and Diagrammatical Data- Data Sufficiency in Statistics- Problems Based on Probability- Permutations and Combinations-Quantitative Aptitude – Number Sequences, Series, Averages, Number Systems, Ratio and Proportion, Profit and Loss, Percentages, Time and work, Speed-Time-Distance, Simple Interest, Analytical and Critical Reasoning, Reading Comprehension.

PAPER-III: General Studies-2

Section I - Physical Features and Natural Resources (6 units)

GEOGRAPHY OF THE WORLD

1. **Lithosphere**-Place of Earth in the Solar System, Rocks, Earthquakes, Volcanoes, Plate tectonics, Agents of Erosion. Atmosphere - Structure and Composition –Elements of Climate and weather – Broad Climatic types. Hydrosphere - World Oceans Salinity – Ocean currents and Tides – Ocean Deposits.
2. **Physiography of Continents and Demographic distribution** - Mountains, Rivers, Forests, Grass lands, Deserts, Human Races, Population Change, distribution and demographic transition, density, sex ratio, quality of life, life expectancy, literacy, standard of living and migration.

GEOGRAPHY OF INDIA

3. **Physiography of India** – Climate, Rivers, Soil, Natural vegetation. Mineral Resources: Iron ore and Manganese - Copper and Bauxite Coal, Petroleum and Natural Gas, Nuclear Deposits. Major crops- Distribution and production of cereals, millets, oilseeds, plantation crops, commercial crops. Indian Demography – Growth, Composition, Distribution, Density, Human Development Index. Demographic Database.

4. **Industrial Planning and Development:** Growth and Distribution of Major, Medium, Small and Tiny Industries – Industrial regions of India. Industrial infrastructure - Railways, Roads, and Ports. Backward regions and rural industrialisaton. Regional Planning and Development -Tribal and hill areas, drought prone areas, command areas and river basins. Classification of Towns and Cities. Urban Structure.

GEOGRAPHY OF KARNATAKA

5. **Physiographic divisions** – Climate, Rivers, rainfall distribution, Natural vegetation and Soil. Agriculture and Agro climatic regions, Major crops, Plantation and commercial crops of Karnataka. Mineral Resources of Karnataka. Sources of Power (Hydro, Thermal, Solar, Nuclear and Wind). Major, Medium and Small Scale industries, Agro based Industries. Transportation and Communication Systems in Karnataka. Geographic information system.
6. **Urban Land use Policy and Urbanisation-** Demographic features Literacy and Urbanisation. Population Problems and policies, Literacy, City classification and urban spheres of influence, rural urban fringe, problems of urban growth. Land use, Town planning, slums and urban housing. Intra and Inter regional trade and the role of rural Market centers

Section II - Overview of Indian Constitution (7 units)

1. **Nature of the Constitution-** Constitutional developments, , salient features of Constitution: Preamble, Directive Principles of State Policy, Indian federation, etc.,
2. **Fundamental rights –** Right to Equality, Right to Freedom, Right against exploitation, Right to freedom of religion, Cultural and Educational rights, Right to Constitutional remedies. Reasonable restrictions - Provision for schedule caste, schedule tribe and minorities, Reservations for SC/ST and OBC's, preventions of SC/ST Atrocities Act, National and State SC/ST Commission
3. **Distribution of Legislative powers** – Between the Union and the State, Administrative and Financial relations between the union and the states, Powers and functions of constitutional bodies. Powers and Functions – Governor, Council of Ministers and Cabinet, Judicial remedies.
4. **Unicameral and Bicameral legislations**– Functions and crisis of accountability, delegated legislation, Legislative procedure and committees of legislature, legislative and judicial control over the delegated legislation, judicial review of administrative action. Comptroller and Auditor General of India, Attorney General of India.
5. **Important Amendments of the Constitution** – Basic structure theory, Emergency provisions and decentralization, Panchayathi raj, Seventy-third and Seventy-fourth amendments etc.,
6. **Welfare mechanism in India** – Directive principles of State policy and their relationships, Right to property, Election Commission, Public Service Commissions, Women's commission, National and State Minorities commission, Backward Commission, Human Rights Commission, Information Commission, Finance Commission, Planning Commission, National Development Council.

7. **Services under the Union and State** – Constitutional provisions relating to Government and public servants.

Section III- Public Administration and Management – International Relations (7 Units)

1. **Private and Public Administration** – its role in society, Public Administration as an art and a science, New Public Administration and New Public Management. Responsive Administration. Difference between administration and management. Difference between public and private administration.
2. **Structure of Organisation** – Personnel, Financial, Administrative Law, Maintenance of Law and Order, Administration for Welfare. Issues of Areas in Indian Administration. Development Administration.
3. **Organisational Behaviour and Management Concepts**; Organisation structure, systems, Processes, Strategies, Policies and Objectives, Decision making, Communication, Centralisation, Decentralisation, Delegation of authority, Responsibility, Control.
4. **Formal and informal Organisation**,– Functional management: Finance, HR, Marketing, Production, Leadership and Motivation.
5. **Management Tools and Techniques**: Decision making under uncertainty, PERT & CPM, PIME, POSD-CORB, SWOT Analysis, Performance Standards and appraisal, PDCA Cycle, Personnel Policies, Manpower - Policy and Planning, Training and Development, Conflict Management, Management of change and development. Team Building, quality tools (Brain Storming, nominal group technique, pareto chart, fishbone diagram and process chart).
6. **Administrative Reforms**, Ethics and Values in Public Service, Public Relations, Good Governance, Accountability and control, Program monitoring and evaluation, Lokpal and Lokayukta, Redressel of Citizens grievances, District Administration and Panchayathi Raj System, Law and Order and Development Functions, Development Programmes. Welfare Programmes for SC/ST and women. People's participation. Administrative Reforms Commissions - Central and State.
7. **United Nations and Specialised Agencies**, Other International Organisations and Agencies - Origin and development of UNO – Role in International Relations, General Assembly, Security Council, Economic and Social Council, Trusteeship Council, International Court of Justice, UN and Peace Keeping Operations, UN and Disarmaments, Future of UN. Special Agencies like WHO, ILO, FAO etc., International Organisations like IMF, World Bank, ADB, WTO, EU, ASEAN, SAARC, AU, NATO, NAM, OPEC, G-8, IAEA, etc., Role of Developing countries in International Relations, India and her Neighbours. Etc.,

PAPER-IV: General Studies-3

Section-I: Role and Impact of Science and Technology in Development of Indian, Information Technology in Public Domain

1. Basics of Science and Technology: Classical and emerging areas of science and Technology (S&T)- Value Addition by Science & Technology- Current Science & Technology developments in India and Importance of Science & Technology as an engine for national development- Industrial development & Urbanization- National policy of Science & Technology ; changes in policy from time to time ; Technology missions- ICT: Basics Computers, Communication, Telephone and Television- Broadband, Internet, & Web-IT industries, BPO, economic & employment growth- E-governance, E-commerce & E-learning- IT& Rural applications, Digital divide & its prevention- Computers in Mass Media.

2. SPACE Science and Technology

- A brief history of global space programmes, and current space programmes.
- Space programme in India- INSAT, IRS systems, EDUSAT, and Chandrayana-1, Etc., and future programme.
- Application of Space technology in India with special references to Educational, Agricultural and Other Rural Developmental Activities.

3. Energy Resources

- Indian Energy scenario- Hydel, Thermal, Nuclear, & Renewable; their potential, harnessing & options.
- Importance of renewable resources- Solar, Wind, Small/ Mini/ Micro Hydel, Biomass, Waste based, Geothermal, Tidal, Hydrogen & Fuel cells.
- Enabling legislations, financial and procedural incentives, and business opportunities for investors.

4. Disasters, Pests and Pollution

- Climatic Change – floods, cyclone, tsunami, natural and manmade disasters and disaster management.
- Crop science in India, Fertilizers, Control of Pests and Crop Diseases.
- Safe Drinking water & supply.
- Sanitation and Waste disposal
- Urbanization, Industrialization, and Pollution control.

5. Related Perceptions

- Universalizing Science and Technology literacy;
- Technology with a Human Face
- Human Development Index (HDI)
- Contribution to Growth of GDP
- Facing Global competition
- Preservation & promotion of culture and indigenous knowledge

6. Knowledge Society

- Human capital, its power, imparting education, Skill, & Values.
- Role of Knowledge for Economic growth, Social development, Cultural enrichment & political empowerment.
- Achieving goals around Knowledge: Eradication of poverty; Universal primary education; Gender equality.

7. Rural Upliftment and Science & Technology

- Advance Infrastructure in Rural Areas, Establishing Physical, Electronic, Knowledge, & Economic Connectivity.

- Regional Language: Usage in ICT
- Horticulture: Hybrid seed production with R&D; Set up Fruit and vegetable processing plants, packaging & Marketing.
- Agro Food Processing: Forming village clusters and establishing Food Storage, Food Processing, and Food
- Packaging & Marketing.
- Bio-fuel cultivation and extraction
- Scientific Water harvesting.

Section II: Advancement and Modern Trends in Natural Sciences, Life Sciences, Agricultural Science, Health and Hygiene -(7 Units)

1. Natural Science:

- **Plants** - crop plants, forest species, medicinal and aromatic plants, usefulness of plants and human affairs (utility), photosynthesis, transpiration, harmful plants. Common classification of animals - domestic and wild animals. Usefulness of animals and human affairs (utility).
- **Microorganisms**: Common bacteria, virus, fungi and their beneficial and harmful effect on mankind.

2. Agriculture Science

- Agriculture scenario and importance of agriculture in the national and state Crop production and protection. Chemical Fertilizers and Vermi compost. Cost benefit and investment analysis of agricultural enterprises. Programmes for production and productivity enhancement - green, white, yellow, blue Recent trends in organic farming and farm mechanization. Farming systems and sustainability. Agro-processing and agro-based industries. Post-harvest technology and value addition. Management of land and water resources.

3. Horticulture and Sericulture

- **Importance of Horticulture-floriculture**, vegetables, fruits, plantation crops, spices, aromatic and medicinal plants. Hi- tech horticulture (green / poly house cultivation). Post-harvest management and value Special promotional programmes for horticulture development.
- **Sericulture:** Importance of sericulture in India and Karnataka, distribution of mulberry and non-mulberry sericulture (area, production and productivity across states), cocoon production.

4. Initiatives in Biotechnology

- Concept of biotechnology, introduction and application of genetic engineering and stem cells research. Molecular breeding and marker assisted selection. Transgenic plants (genetically modified) and their beneficial and harmful effects on environment and Biotechnology in agriculture (bio-fertilizers, bio-pesticides, bio-fuels, tissue culture, cloning). Food bio-technology, food safety and microbial standards, food quality standards, food laws and regulations.

5. Animal Husbandry (veterinary, dairy and fishery sciences)

- **Importance of livestock** in the national and state economy. Important exotic and Indian breeds of cattle, buffalo, sheep, goat, swine and poultry.
- **Milk production** management and dairy Milk Cooperative Unions and their role in rural economy- AMUL, KMF.
- **Fisheries** resources in India-Marine fisheries resources and potential, exclusive economic zone of India, coastal aquaculture and Mari Inland water resources, commercially important fishes, responsible fishing. Ornamental fish production. Value addition of livestock products and quality control.

6. Agriculture development policies, programmes and trade

- Salient Features of National and Karnataka state agricultural policies, Agriculture Price Policy, National Seed Policy, Agricultural Credit Policy, National Agricultural Research System (NARS). Farmers welfare programmes in India, Farm women development programmes, Agriculture under Five Year Plans, Development / strengthening of agricultural marketing infrastructure-Grading and Standardization, Crop Insurance Scheme-National Agricultural Insurance Scheme (NAIS), Weather Based Crop Insurance Scheme (WBCIS), Food Security, National Watershed Development Programme, Export potential of agriculture-horticulture-livestock. Commercialization and globalization of agriculture- WTO, AoA (Agreement on Agriculture).

7. Health and Hygiene

- Human - Digestive, circulatory, respiratory, excretory and reproductive systems. Allopathic, Indian System of Medicine, Naturopathy and Yoga (AYUSH), NRHM, National HIV Programme, Tuberculosis programme, P and SM (Preventive and Social Medicine), Diseases - Communicable diseases, epidemic diseases, endemic diseases, vector borne diseases. Basic knowledge of infections caused by different groups of microorganisms – Gastroenteritis, cholera, tuberculosis, malaria, viral infections, HIV, encephalitis, chikungunya, bird flu, dengue, preventive measures during out breaks. Vaccines, introduction to immunity, production of DPT and rabies vaccine and hepatitis Application of immunological methods in diagnosis. Health awareness Programme, Etc.,

Section – III Challenges and Issues of Development on Environment & Ecology (6 units)

1. **Environmental Segments:** Promotion and protection –forest conservation and Protection of Wild Life, Project Tiger, National parks and Sanctuaries, Impact of mining on forest and environment. Red Data Book: Endangered species, Eco Tourism and any other related current issues.
2. **Natural Resources:** Forest - Types and conservation of forest and forest resources. Water resources-flood and drought occurrences, water resource management, Land resources. Rain water harvesting, Infrastructure development – Dams, Roads, Rails, Bridges, Industry,urbanization and waste water management, acquisition and rehabilitation and other issues due to human interventions and any other related current issues.

3. **Eco System and Biodiversity:** Ecology – Basic concepts of ecology, Eco System, Food Chain, Biodiversity and its conservation, Hot spots of Biodiversity, threats to diversity, forest sustainable development and management, any other related current issues, IPR.
4. **Environment Pollution and Solid Waste Management:** Air Pollution, Water pollution, Soil Pollution, Noise Pollution and remedies. Solid waste Management- Types of Solid waste management, factors affecting the solid waste generation, Impact of solid waste, Recycling and reuse. Any other related Current issues. Environment protection Act, Air (prevention and control of pollution), water (prevention and control of pollution), water pollution Cess Act.
5. **Role of Information Technology in Environment and Human Health:** Global Environmental issues like Climate change, acid rains, global warming, wasteland reclamation, watershed management, watershed approach for sustainable development, linking of rivers, water crisis. Any other related current issues.
6. **State community-civil society interface, Joint forest management system:** Community participation, Development, Displacement and Rehabilitation. Disaster Management, Sustainable Forest Development. Flood, earthquake, drought, tsunami, Global warming – Ozone layer, CFC, carbon credit.

PAPER-V: General Studies-4

Section-I: Ethics

- Essence, determinants and consequences of ethics in human action, dimensions of ethics, ethics in private and public relationships.
- Ethics in public administration, status and problems, ethical dilemmas in government and private institutions, laws, rules, regulations and conscience as source of ethical guidance;
- Accountability and ethical governance, strengthening of ethical and moral values in governance, ethical issues in international relations and funding, corporate governance;
- Concept of public service, philosophical basis of governance, information sharing and transparency in government, Right to Information, codes of ethics, codes of conduct, citizen charters, work culture, quality of service delivery, utilization of public fund, challenges of corruption.
- Human values- lessons from the lives and teachings of great leaders, reformers, administrators, Role of family, society, and educational institutions in inculcating values.

Section-II: Integrity

- Integrity, impartiality and non- partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker sections,

Section-III: Aptitude

- Aptitude and foundational values for civil service, Content, structure, function, its relation with thoughts and behavior, moral and political attitudes, social influence and persuasion, Aptitude and foundational values for civil service, emotional intelligence and their utilities and application in administration and governance, contributions of moral thinkers from India and the world.
- **Case studies of above issues.**