

CIVIL SERVICES EXAMINATION SYLLABUS

❖ Preliminary(400 marks, MCQ, 0.33 -ve marking):

- Paper-I(200 marks, 2 hours):
- Paper-II(200 marks, 2 hours, Compulsory =33%):

❖ Mains(Conventional types)(2+7=9 papers):

- **Qualifying papers**[Matriculation standard](marks obtained in these papers will not be counted for ranking):

- **Paper-A(300 marks, Qualifying=25%):**
Indian Language => Bengali.
- **Paper-B(300 marks, Qualifying=25%):**
English.

➤ Papers to be counted for merits[Graduate standard]:

- **Paper-I(250 marks, 3 hrs):**
 - Essay.
- **Paper-II(250 marks, 3 hrs):**
 - **General studies-1:**
Indian Heritage and Culture, History and Geography of the World and Society.
- **Paper-III(250 marks, 3 hrs):**
 - **General studies-2:**
Governance, Constitution, Polity, Social Justice and International relations.
- **Paper-IV(250 marks, 3 hrs):**
 - **General studies-3:**
Technology, Economic Development, Bio-diversity, Environment, Security and Disaster Management.
- **Paper-V(250 marks, 3 hrs):**
 - **General studies-4:**
Ethics, Integrity and Aptitude.
- **Paper-VI(250 marks, 3 hrs):**
 - **Optional paper-1:**
Electrical Engineering Paper-I.
- **Paper-VII(250 marks, 3 hrs):**
 - **Optional paper-2:**
Electrical Engineering Paper-II.

✓ Subtotal(written test, counted for merit)=1750 marks.

○ Interview = 275 marks.

✓ GRAND TOTAL : 2025 MARKS.

Preliminary Examination

Paper I - (200 marks):

- 1) Current events of national and international importance.
- 2) History of India and Indian National Movement.
- 3) Indian and World Geography-Physical, Social, Economic Geography of India and the World.
- 4) Indian Polity and Governance-Constitution, Political System, Panchayati Raj, Public Policy, Rights Issues, etc.
- 5) Economic and Social Development-Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.
- 6) General issues on Environmental ecology, Bio-diversity and Climate Change - that do not require subject specialization.
- 7) General Science.

Paper II - (200 marks):

- 1) Comprehension.
- 2) Interpersonal skills including communication skills.
- 3) Logical reasoning and analytical ability.
- 4) Decision making and problem solving.
- 5) General mental ability.
- 6) Basic numeracy (numbers and their relations, orders of magnitude, etc. — Class X level), Data interpretation (charts, graphs, tables, data sufficiency etc. — Class X level).

Main Examination

➤ **Qualifying Papers On Indian Languages And English:**

[The aim of the paper is to test the candidates' ability to read and understand serious discursive prose, and to express his ideas clearly and correctly, in English and Indian language concerned].

The pattern of questions would be broadly as follows:

- (i) Comprehension of given passages.
- (ii) Precis Writing.
- (iii) Usage and Vocabulary.
- (iv) Short Essays.

Indian Languages:—

- (i) comprehension of given passages.
- (ii) Precis Writing.
- (iii) Usage and Vocabulary.
- (iv) Short Essays.
- (v) Translation from English to the Indian Language and vice-versa.

➤ **Papers to be counted for merits[Graduate standard]:**

PAPER-I

Essay: Candidates may be required to write essays on multiple topics. They will be expected to keep closely to the subject of the essay to arrange their ideas in orderly fashion, and to write concisely. Credit will be given for effective and exact expression.

PAPER-II

General Studies-1 :(Indian Heritage and Culture, History and Geography of the World and Society).

- 1) Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times.
- 2) Modern Indian history from about the middle of the eighteenth century until the present-significant events, personalities, issues.
- 3) The Freedom Struggle — its various stages and important contributors/contributions from different parts of the country.
- 4) Post-independence consolidation and reorganization within the country.
- 5) History of the world will include events from 18th century such as industrial revolution, world wars, redrawing of national boundaries, colonization, decolonization, political philosophies like communism, capitalism, socialism etc.— their forms and effect on the society.
- 6) Salient features of Indian Society, Diversity of India.
- 7) Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies.
- 8) Effects of globalization on Indian society.
- 9) Social empowerment, communalism, regionalism & secularism.
- 10) Salient features of world's physical geography.
- 11) Distribution of key natural resources across the world (including South Asia and the Indian sub-continent); factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India).
- 12) Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

PAPER-III**General Studies-2: (Governance, Constitution, Polity, Social Justice and International relations).**

- 1) Indian Constitution—historical underpinnings, evolution, features, amendments, significant provisions and basic structure.
- 2) Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.
- 3) Separation of powers between various organs dispute redressal mechanisms and institutions.
- 4) Comparison of the Indian constitutional scheme with that of other countries.
- 5) Parliament and State legislatures—structure, functioning, conduct of business, powers & privileges and issues arising out of these.
- 6) Structure, organization and functioning of the Executive and the Judiciary—Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.
- 7) Salient features of the Representation of People's Act.
- 8) Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.
- 9) Statutory, regulatory and various quasi-judicial bodies.
- 10) Government policies and interventions for development in various sectors and issues arising out of their design and implementation.
- 11) Development processes and the development industry —the role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.
- 12) Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.
- 13) Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.
- 14) Issues relating to poverty and hunger.
- 15) Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.
- 16) Role of civil services in a democracy.
- 17) India and its neighborhood- relations.
- 18) Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.
- 19) Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.
- 20) Important International institutions, agencies and fora- their structure, mandate.

PAPER-IV

General Studies-3: (Technology, Economic Development, Bio diversity, Environment, Security and Disaster Management).

- 1) Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.
- 2) Inclusive growth and issues arising from it.
- 3) Government Budgeting.
- 4) Major crops-cropping patterns in various parts of the country, - different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.
- 5) Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.
- 6) Food processing and related industries in India- scope and significance, location, upstream and downstream requirements, supply chain management.
- 7) Land reforms in India.
- 8) Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.
- 9) Infrastructure: Energy, Ports, Roads, Airports, Railways etc.
- 10) Investment models.
- 11) Science and Technology- developments and their applications and effects in everyday life.
- 12) Achievements of Indians in science & technology; indigenization of technology and developing new technology.
- 13) Awareness in the fields of IT, Space, Computers, robotics, nano-technology, biotechnology and issues relating to intellectual property rights.
- 14) Conservation, environmental pollution and degradation, environmental impact assessment.
- 15) Disaster and disaster management.
- 16) Linkages between development and spread of extremism.
- 17) Role of external state and non-state actors in creating challenges to internal security.
- 18) Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.
- 19) Security challenges and their management in border areas - linkages of organized crime with terrorism.
- 20) Various Security forces and agencies and their mandate.

PAPER-V

General Studies- 4: (Ethics, Integrity and Aptitude).

This paper will include questions to test the candidates' attitude and approach to issues relating to integrity, probity in public life and his problem solving approach to various issues and conflicts faced by him in dealing with society. Questions may utilize the case study approach to determine these aspects. The following broad areas will be covered:

- 1) Ethics and Human Interface: Essence, determinants and consequences of Ethics in-human actions; dimensions of ethics; ethics - in private and public relationships. Human Values - lessons from the lives and teachings of great leaders, reformers and administrators; role of family society and educational institutions in inculcating values.

- 2) Attitude: content, structure, function; its influence and relation with thought and behaviour; moral and political attitudes; social influence and persuasion.
- 3) Aptitude and foundational values for Civil Service, integrity, impartiality and nonpartisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker-sections.
- 4) Emotional intelligence-concepts, and their utilities and application in administration and governance.
- 5) Contributions of moral thinkers and philosophers from India and world.
- 6) Public/Civil service values and Ethics in Public administration: Status and problems; ethical concerns and dilemmas in government and private institutions; laws, rules, regulations and conscience as sources of ethical guidance; accountability and ethical governance; strengthening of ethical and moral values in governance; ethical issues in international relations and funding; corporate governance.
- 7) Probity in Governance: Concept of public service; Philosophical basis of governance and probity; Information sharing and transparency in government, Right to Information, Codes of Ethics, Codes of Conduct, Citizen's Charters, Work culture, Quality of service delivery, Utilization of public funds, challenges of corruption.
- 8) Case Studies on above issues.

PAPER-VI

ELECTRICAL ENGINEERING

PAPER-1

1. Circuits—Theory :

Circuit components; network graphs; KCL, KVL; Circuit analysis methods : nodal analysis, mesh analysis; basic network theorems and applications; transient analysis : RL, RC and RLC circuits; sinusoidal steady state analysis; resonant circuits; coupled circuits; balanced 3-phase circuits. Two-port networks.

2. Signals and Systems :

Representation of continuous-time and discrete-time signals and systems; LTI systems; convolution; impulse response; time-domain analysis of LTI systems based on convolution and differential/difference equations. Fourier transform, Laplace transform, Z-transform, Transfer function. Sampling and recovery of signals DFT, FFT Processing of analog signals through discrete-time systems.

3. E.M. Theory :

Maxwell's equations, wave propagation in bounded media. Boundary conditions, reflection and refraction of plane waves. Transmission lines : travelling and standing waves, impedance matching, Smith chart.

4. Analog Electronics :

Characteristics and equivalent circuits (large and small-signal) of Diode, BJT, JFET and MOSFET. Diode circuits : Clipping, clamping, rectifier. Biasing and bias stability. FET amplifiers. Current mirror; Amplifiers : single and multi-stage, differential, operational feedback and power. Analysis of amplifiers; frequency-response of amplifiers. OPAMP circuits. Filters; sinusoidal oscillators : criterion for oscillation; single-transistor and OPAMP configurations. Function generators and wave-shaping circuits. Linear and switching power supplies.

5. Digital Electronics :

Boolean algebra; minimisation of Boolean functions; logic gates; digital IC families (DTL, TTL, ECL, MOS, CMOS). Combinational circuits : arithmetic circuits, code converters, multiplexers and decoders. Sequential circuits: latches and flip-flops, counters and shift-registers. Comparators, timers, multivibrators. Sample and hold circuits, ADCs and DACs. Semiconductor memories. Logic implementation using programmable devices (ROM, PLA, FPGA).

6. Energy Conversion :

Principles of electromechanical energy conversion : Torque and emf in rotating machines. DC machines : characteristics and performance analysis; starting and speed control of motors. Transformers : principles of operation and analysis; regulation, efficiency; 3-phase transformers. 3-phase induction machines and synchronous machines : characteristics and performance analysis; speed control.

7. Power Electronics and Electric Drives :

Semi-conductor power devices : diode, transistor, thyristor, triac, GTO and MOSFET-static characteristics and principles of operation; triggering circuits; phase control rectifiers; bridge converters : fully-controlled and half-controlled; principles of thyristor choppers and inverters; DC-DC converters; Switch mode inverter; basic concepts of speed control of dc and ac motor drives applications of variable-speed drives.

8. Analog Communication :

Random variables : continuous, discrete; probability, probability functions. Statistical averages; probability models; Random signals and noise : white noise, noise equivalent bandwidth; signal transmission with noise; signal to noise ratio. Linear CW modulation : Amplitude modulation : DSB, DSB-SC and SSB. Modulators and Demodulators; Phase and Frequency modulation : PM & FM signals; narrow band FM; generation & detection of FM and PM, Deemphasis, Preemphasis. CW modulation system : Superhetrodyne receivers, AM receivers, communication receivers, FM receivers, phase locked loop, SSB receiver Signal to noise ratio calculation or AM and FM receivers.

PAPER-VII**ELECTRICAL ENGINEERING****PAPER-2****1. Control Systems :**

Elements of control systems; block-diagram representations; open-loop & closed-loop systems; principles and applications of feed-back. Control system components. LTI systems : time-domain and transform-domain analysis. Stability : Routh Hurwitz criterion, root-loci, Bode-plots and polar plots, Nyquist's criterion; Design of lead-lag compensators. Proportional, PI, PID controllers. State-variable representation and analysis of control systems.

2. Microprocessors and Microcomputers :

PC organisation; CPU, instruction set, register setting diagram, programming, interrupts, memory interfacing, I/O interfacing, programmable peripheral devices.

3. Measurement and Instrumentation :

Error analysis; measurement of current voltage, power, energy, power-factor, resistance, inductance, capacitance and frequency; bridge measurements. Signal conditioning circuit; Electronic measuring instruments : multimeter, CRO, digital voltmeter, frequency counter, Q-meter, spectrum-analyser, distortion-meter. Transducers : thermocouple, thermistor, LVDT, strain-gauge, piezo-electric crystal.

4. Power Systems: Analysis and Control :

Steady-state performance of overhead transmission lines and cables; principles of active and reactive power transfer and distribution; per-unit quantities; bus admittance and impedance matrices; load flow; voltage control and power factor correction; economic operation; symmetrical components, analysis of symmetrical and unsymmetrical faults. Concepts of system stability : swing curves and equal area criterion. Static VAR system. Basic concepts of HVDC transmission.

5. Power System Protection :

Principles of over current, differential and distance protection. Concept of solid state relays. Circuit breakers. Computer aided protection : introduction; line, bus, generator, transformer protection; numeric relays and application of DSP to protection.

6. Digital Communication :

Pulse code modulation (PCM), differential pulse code modulation (DPCM), delta modulation (DM), Digital modulation and demodulation schemes : amplitude, phase and frequency keying schemes (ASK, PSK, FSK). Error control coding : error detection and correction, linear block codes, convolution codes. Information measure and source coding. Data networks, 7-layer architecture.
