

## SSC – Junior Engineer

### Paper 1: Computer-Based Test (Objective Type)

Section	Topics
<b>1. General Intelligence &amp; Reasoning</b>	Analogies, Classification, Series (Number and Alphabet), Coding-Decoding, Syllogism, Spatial Visualization, Visual Memory, Decision Making, Directions, Non-verbal reasoning, etc.
<b>2. General Awareness</b>	Current Affairs, India's History, Geography, Polity, Economics, Environmental Issues, Awards and Honors, Science & Technology, Sports, Culture, etc.
<b>3. General Engineering</b>	Topics vary based on the chosen discipline: Civil, Mechanical, or Electrical Engineering. Details below.

### Paper 2: Descriptive (Subject-Specific)

This paper assesses technical knowledge in the chosen discipline (Civil, Mechanical, or Electrical Engineering).

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#### General Engineering Syllabus (Paper 1 & Paper 2)

##### 1. Civil Engineering

- **Building Materials:** Properties, classifications, uses.
- **Surveying:** Instruments, leveling, measurement techniques.
- **Soil Mechanics:** Properties, classification, seepage, compaction.
- **Hydraulics:** Fluid properties, flow, Bernoulli's equation, open channel flow.
- **Environmental Engineering:** Water demand, water quality, treatment, air pollution.
- **Transportation Engineering:** Highways, traffic engineering.
- **Structural Engineering:** Theory of structures, RCC design, steel structures.
- **Irrigation Engineering:** Hydrology, types of irrigation, dams, canals.

## 2. Mechanical Engineering

- **Strength of Materials:** Stress-strain, bending, torsion.
  - **Thermal Engineering:** Laws of thermodynamics, IC engines, boilers.
  - **Fluid Mechanics:** Properties, flow types, Bernoulli's theorem, pumps.
  - **Theory of Machines:** Gears, cams, governors, vibrations.
  - **Production Engineering:** Welding, machining, metal cutting.
  - **Industrial Engineering:** Production planning, inventory control.
  - **Refrigeration & Air Conditioning:** Basics, psychrometry.
  - **Engineering Mechanics:** Laws of motion, friction, dynamics.
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## 3. Electrical Engineering

- **Basic Concepts:** Voltage, current, resistance, power, energy.
  - **Circuit Laws:** Ohm's Law, Kirchhoff's laws, network theorems.
  - **Electromagnetic Theory:** Basics of magnetism, electromagnetism.
  - **Electrical Machines:** Transformers, generators, motors.
  - **Measurement & Measuring Instruments:** Voltmeters, ammeters, energy meters.
  - **Power Systems:** Transmission, distribution, fault analysis.
  - **Control Systems:** Basics of open and closed-loop systems.
  - **Basic Electronics:** Diodes, transistors, amplifiers.
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### Exam Pattern Recap

#### Paper 1 (Objective)

- **General Intelligence & Reasoning:** 50 marks
- **General Awareness:** 50 marks
- **General Engineering (Discipline-specific):** 100 marks

#### Paper 2 (Descriptive)

- **Engineering Discipline (Civil/Mechanical/Electrical):** 300 marks