

Date: 14/10/2026

NOTICE

Sub: Syllabus for Operations & Maintenance posts on direct recruitment basis.

Ref.- Vacancy Notice No. 32/2026 dated 10/09/2026.

The CBT Pattern/ Syllabus for Post Code (D01-D09) is mentioned as under:

S. No.	Section	Description	No. of Questions	Syllabus
i.	A	Reasoning (common for all Post Codes, i.e. D01-D09)	20	- Verbal Reasoning. - Non-Verbal Reasoning. - Analytical Reasoning (Statement, Argument, Assumption, Conclusion, Course of Action, Syllogism, Cause and Effects etc.).
ii.	B	General Knowledge/ Current Affairs (common for all Post Codes, i.e. D01-D09)	20	- Indian History. - Geography. - Science. - Indian Polity. - Economics. - Current Affairs (National and International).
iii.	C	Subject Knowledge	60	Detailed syllabus against each Post Code is mentioned below.

Subject Knowledge Syllabus

Supervisor-I (Operations) [Post Code-D01]
i. RRTS/ High Speed Operations - Fundamentals of Railway/ RRTS operations. - Train operations and operating procedures. - Timetable and traffic regulation. - Station operations. - OCC/ Operations Control Centre functions. - Train regulation and operational coordination. - Normal, degraded and abnormal modes of operation. - Coordination between Operations and maintenance departments. ii. Operational Systems & Interfaces - Basic functional understanding of signalling and train control systems. - Rolling stock and train operating interfaces. - Traction/ power supply interface with operations. - Platform Screen Doors and station systems. - Telecom and operational communication systems. - AFC and passenger information systems. - Interface between OCC, stations, trains and field staff.

iii. Safety Regulations & Standards

- Railway/ RRTS operating rules and safety procedures.
- Safe train movement.
- Station and passenger safety.
- OCC safety procedures.
- Worksite/ possession and isolation procedures.
- Incident/ accident reporting.
- Safety responsibilities and operational discipline.
- Safety- critical communication and coordination.

iv. Risk Assessment & Operational Safety

- Hazard identification.
- Operational risk assessment.
- Risk mitigation and control measures.
- Safety barriers and preventive measures.
- Risk associated with degraded operation.
- Failure and emergency scenarios.
- Incident prevention and lessons learned.

v. Emergency & Contingency Management

- Train failure and train evacuation.
- Fire/ smoke emergency.
- Medical emergency.
- Passenger evacuation.
- Signalling/ train control failure.
- Traction/ power failure.
- Telecom/ communication failure.
- Station/ platform emergency.
- External emergencies affecting operations.
- Emergency communication and escalation.
- Coordination with police, fire, medical and other agencies.
- Restoration of normal operations after an incident.

vi. Operational Communication

- OCC to station to train communication.
- Communication protocols during normal and abnormal operations.
- Emergency communication.
- Incident reporting and documentation.
- Escalation procedures.
- Clear, concise and accurate communication in safety-critical situations.

vii. Analytical & Decision-Making Skills

- Interpretation of operational information/ data.
- Identification of abnormal operating conditions.
- Incident and failure analysis.
- Prioritisation of operational actions.
- Decision-making under time-critical situations.
- Selection of appropriate corrective and preventive actions.

viii. Adaptability & Operational Situational Awareness

- Response to changing operational conditions.
- Degraded mode working.
- Handling simultaneous operational issues.

- Adaptation during service disruptions.
- Decision-making during unforeseen situations.
- Maintaining safety and service continuity under changing circumstances.

Supervisor-I (Electronics) [Post Code-Do2]

- Electronic Components and Materials.
- Electronic Devices and Circuits.
- Digital Electronics.
- Linear Integrated Circuits.
- Microprocessors and Microcontrollers.
- Electronic Measurements.
- Communication Engineering.
- Data Communication and Networks.
- Computer Programming.
- Basic Electrical Engineering.

Supervisor-I (Electrical) [Post Code-Do3]

i. Electrical Machines

- Transformers.
- DC Machines.
- AC Machines.
- Induction Motors.
- Synchronous Machines.

ii. Power Systems

- Generation.
- Transmission and Distribution.
- Switchgear and Protection.

iii. Basic Electronics and Measurement

- Semiconductors.
- Digital Electronics.
- Measurements.

iv. Circuit Theory and Basic Electrical Engineering

- Network Theorems.
- AC Fundamentals.
- Magnetic Circuits.

Supervisor-I (Mechanical) [Post Code-Do4]

i. Applied Mechanics and Design

- Engineering Mechanics.
- Strength of Materials (SOM).
- Theory of Materials (TOM).
- Machine Design.

ii. Thermal Engineering

- Thermodynamics.

- Fluid Mechanics.
- Hydraulic Mechanics.
- Refrigeration and Air Conditioning (RAC).

iii. **Manufacturing and Production**

- Manufacturing Technology.
- Workshop Technology.
- Industrial Engineering.
- Material Science.

Supervisor-I (Civil) [Post Code-Do5]

- Building Materials.
- Estimating, Costing, and Valuation.
- Surveying.
- Theory of Structures/ SOM.
- Concrete Technology and RCC/ Steel Design.
- Hydraulics and Fluid Mechanics.
- Irrigation Engineering.
- Transportation Engineering.
- Environmental Engineering.

Junior Maintainer (Electrical) [Post Code-Do6]

- Safety, Tools and Basic Electricity.
- Wiring Systems and Earthing.
- Magnetism, Cells and AC/ DC Theory.
- Electrical Machines and Transformers.
- Power Generation, Transmission and Basic Electronics.

Junior Maintainer (Fitter) [Post Code-Do7]

- Safety and Environment.
- Hand and Marking Tools.
- Precision Measuring Instruments.
- Fasteners and Fits.
- Cutting Tools and Operations.
- Turning and Machine Tools.
- Heat Treatment and Metals.
- Assembly, Maintenance and Hydraulics.

Junior Maintainer (RAC) [Post Code-Do8]

i. Basic Workshop and Science Fundamentals

- Safety and Tools.
- Fitting and Sheet Metal.
- Basic Electricity and Electronics.

ii. Refrigeration Principles and Systems

- Vapour Compression System (VCRS).
- Carnot Cycle.

- Refrigerants.
- Compressors.
- Condensers.
- Evaporators.
- Expansion Devices.

iii. Domestic, Commercial and Industrial Systems

- Domestic Appliances.
- Air Conditioning Units.
- Psychrometry.
- Commercial/ Industrial Applications.
- Specialized Systems.

iv. Maintenance and Troubleshooting

- Service Operations.
- Fault Diagnosis.

Junior Maintainer (Electronics) [Post Code-D09]

i. Basic Electronics and Analog Systems

- Basic Electricity and Safety.
- Cells and Batteries.
- Measuring Instruments.
- Electronic Components.
- Power Supplies.
- Transistors and Amplifiers.
- Digital Electronics.
- Linear Integrated Circuits.
- Computer Hardware and Peripherals.
- Communication Electronics.
- IoT Fundamentals.

2. The admit card for CBT will also be sent separately on the registered email of the candidate.

Career Cell
NCRTC