

**NHSRCL Exam Pattern & Syllabus for the post of  
Junior Technical Manager (Civil)  
advertised against vacancy notice no. 04/2025**

NHSRCL Exam Pattern is an important document according to the exam point of view. With the help of exam pattern, applicant can get an idea of question framing and design.

### **NHSRCL Exam Pattern**

This examination will be conducted on Computer Based Mode. The paper will consist of Multiple-Choice questions of Objective Type. In this paper, question will be asked from General Awareness, General Intelligence, Reasoning, Quantitative Aptitude, General English and Knowledge of Discipline.

- There will a total of 100 question.
- Each question will carry equal mark.
- There will be negative marking for every wrong answer.
- 1/4 Mark will be deducted for wrong answer.
- Duration of paper will be 90 Minutes.

### **Exam Pattern**

<b>Subject</b>	<b>Maximum Question</b>	<b>Maximum Marks</b>	<b>Duration of Paper</b>
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Junior Technical Manager (Civil) Examination

### General Awareness

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### General English

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### General Intelligence, Reasoning & Quantitative Aptitude

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
- HCF, LCM
- Simplification
- Decimal Fractions
- Ratio & proportions
- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### Knowledge of Discipline

1. Surveying:- Tachometric surveying, Remote Sensing, GPS and GIS, Latest Surveying instruments and methods, Practical field applications in curve setting, alignment fixing etc.
2. Construction Materials and Management: Construction Materials: Structural Steel – Composition, material properties and behaviour; Concrete -

Constituents, short-term and long-term properties, Guidelines for mix design High Performance concrete. Construction Management: Types of construction projects; Project planning and network analysis - PERT and CPM; Cost estimation, Construction Equipment, Construction Quality inspection and testing, Quality control, Quality Assurances, Quality Certification, Safety in Constructions.

3. Concrete Structures: Working stress and Limit state design concepts; Design of beams, slabs, columns; Bond and development length; Prestressed concrete beams.
4. Steel Structures: Working stress and Limit state design concepts; Design of tension and compression members, beams and beam- columns, column bases; Connections - simple and eccentric, beam-column connections, plate girders and trusses; Concept of plastic analysis -beams and frames.
5. Soil Mechanics: Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Seepage through soils – two - dimensional flow, flow nets, uplift pressure, piping, capillarity, seepage force; Principle of effective stress and quicksand condition; Compaction of soils; One- dimensional consolidation, time rate of consolidation; Shear Strength, Mohr's circle, effective and total shear strength parameters, Stress-Strain characteristics of clays and sand; Stress paths.
6. Foundation Engineering: Sub-surface investigations - Drilling bore holes, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories - Rankine and Coulomb; Stability of slopes – Finite and infinite slopes, Bishop's method; Stress distribution in soils – Boussinesq's theory; Pressure bulbs, Shallow foundations – Terzaghi's and Meyerhoff's bearing capacity theories, effect of water table; Combined footing and raft foundation; Contact pressure; Settlement analysis in sands and clays; Deep foundations – dynamic and static formulae, Axial load capacity of piles in sands and clays, pile load test, pile under lateral loading, pile group efficiency, negative skin friction.
7. Contracts: Basic elements of contracts, Analysis of variations, escalations, extension of time, settlement of claims, Breach of contract, Dispute resolution.
8. Track: Basic Track Structure, Turn-outs and crossing, curved track, Track alignment.
9. Tunnelling: Alignment, methods of construction, disposal of muck, drainage, lighting and ventilation.

**NHSRCL Exam Pattern & Syllabus for the post of  
Junior Technical Manager (Electrical)  
advertised against vacancy notice no. 04/2025**

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### **Exam Pattern**

<b>Subject</b>	<b>Maximum Question</b>	<b>Maximum Marks</b>	<b>Duration of Paper</b>
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Junior Technical Manager (Electrical) Examination

### General Awareness

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### General English

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### General Intelligence, Reasoning & Quantitative Aptitude

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
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- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### Knowledge of Discipline

#### General Electrical Engineering & its Railway Applications

- Power System & Analysis
- Utilization of Electrical Energy
- Power System Protection & Switch Gear
- Electrical Machines.
- Electromagnetic Theory.

- Network Analysis.
- Electrical Instrumentation.
- Power Electronics & Drives.
- Control Systems.
- Building Electrical Works
- Railway Traction Power Supply System
- Various types of Overhead Equipment's (OHE)

**NHSRCL Exam Pattern & Syllabus for the post of  
Junior Technical Manager (SNT)  
advertised against vacancy notice no. 04/2025**

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- Duration of paper will be 90 Minutes.

### **Exam Pattern**

<b>Subject</b>	<b>Maximum Question</b>	<b>Maximum Marks</b>	<b>Duration of Paper</b>
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Junior Technical Manager (SNT) Examination

### General Awareness

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### General English

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### General Intelligence, Reasoning & Quantitative Aptitude

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
- HCF, LCM
- Simplification
- Decimal Fractions
- Ratio & proportions
- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### Knowledge of Discipline

- General Railway Signalling and Telecommunications
- Various types of Signalling and Telecommunication systems are used in Railways and Metros.
- Signalling & Interlocking Principles.
- Electronic Interlocking, Point Machines, Signalling Cables.
- Optical fibre communications and its related equipment.

- Electromagnetic Theory.
- Electronics and Electrical Instrumentation.
- Contracts and tendering.
- ACTS and Rules of Railways and Metros for opening and operation.
- International standards of RAMS (CENELAC etc.)
- Grade of Automation in Railways and Metros.

**NHSRCL Exam Pattern & Syllabus for the post of  
Junior Technical Manager (Rolling Stock)  
advertised against vacancy notice no. 04/2025**

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- There will a total of 100 question.
- Each question will carry equal mark.
- There will be negative marking for every wrong answer.
- 1/4 Mark will be deducted for wrong answer.
- Duration of paper will be 90 Minutes.

### **Exam Pattern**

<b>Subject</b>	<b>Maximum Question</b>	<b>Maximum Marks</b>	<b>Duration of Paper</b>
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Junior Technical Manager (Rolling Stock) Examination

### General Awareness

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### General English

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### General Intelligence, Reasoning & Quantitative Aptitude

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
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- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### Knowledge of Discipline

- General aspects of Railways/Metros such as infrastructure jargons, grades of automation, project phases, etc.
- Basic understanding of EMU type Rolling Stock systems, sub-systems and nomenclature of equipment.
- Basics of Propulsion system, Brakes, Bogie and Train Control System of EMU rolling stock.

- Various types of maintenance of EMU rolling stock – time based, condition based, preventive, corrective maintenance.
- Basic understanding of Machinery and Plants used in EMU Rolling Stock Depot such as Jacks, Lathe machines, EOT Cranes etc.
- Basics of Electrical, Electronic & Mechanical Engineering.

**NHSRCL Exam Pattern & Syllabus for the post of  
Assistant Technical Manager (Architecture)  
advertised against vacancy notice no. 04/2025**

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**NHSRCL Exam Pattern**

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- There will a total of 100 question.
- Each question will carry equal mark.
- There will be negative marking for every wrong answer.
- 1/4 Mark will be deducted for wrong answer.
- Duration of paper will be 90 Minutes.

**Exam Pattern**

Subject	Maximum Question	Maximum Marks	Duration of Paper
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Assistant Technical Manager (Architecture) Examination

### **General Awareness**

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### **General English**

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### **General Intelligence, Reasoning & Quantitative Aptitude**

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
- HCF, LCM
- Simplification
- Decimal Fractions
- Ratio & proportions
- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### **Knowledge of Discipline**

- Architecture and Design - Planning and design considerations for different building types, Anthropometrics, Site planning, Barrier-free design, Circulation-horizontal and vertical, Space Standards, National Building Code and Building Bye-laws.

- Transit Architecture - Passenger flow, circulation areas, Egress Capacity and other Station Sizing Calculations
- Building Materials, Construction & Management - Behavioral applications and characteristics of various building materials, Fire resistance and Ratings, Low VOC, Specifications of Architectural materials, etc.
- Environmental Planning & Design - Green Building- Concepts & Rating, ECBC, Climate responsive design, Solar architecture.
- Urban Design - Site planning, Development controls norms and building byelaws, Transit Oriented Development (TOD), Design of road intersections, parking norms. Integration of various Transportation modes, urban form interrelationships, Design of road intersections, parking areas Mass Rapid transport systems, Pedestrian and Non-Motorized infrastructure.
- Urban Planning & Housing - Residential densities, Standards for housing and community facilities. Transit Oriented Development (TOD) and Sustainable urban development
- Building Services - Basic Concepts of Plumbing & Fire Fighting systems, Electrical & Mechanical systems, Fire Alarm & Detection systems, Telecommunication systems, Signalling Systems, Escalator, Lifts & Travellators and other MEP services
- Site Management - Construction Management, sequencing and site coordination, Cost and time scheduling, QA & QC, etc.
- Software Skills - AutoCAD 2D, MS Office, Adobe -Photoshop and PDF, etc. Revit, Navisworks and other BIM software.

**NHSRCL Exam Pattern & Syllabus for the post of  
Assistant Technical Manager (Database Administrator)  
advertised against vacancy notice no. 04/2025**

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- Duration of paper will be 90 Minutes.

### **Exam Pattern**

<b>Subject</b>	<b>Maximum Question</b>	<b>Maximum Marks</b>	<b>Duration of Paper</b>
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Assistant Technical Manager (Database Administrator) Examination

### **General Awareness**

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### **General English**

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### **General Intelligence, Reasoning & Quantitative Aptitude**

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
- Spatial Orientation.
- Number System
- HCF, LCM
- Simplification
- Decimal Fractions
- Ratio & proportions
- Unitary Method
- Percentage, Time & Distance
- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### **Knowledge of Discipline**

- Oracle Application Installation & Administration - Implementation, Configuration, Maintenance, Troubleshooting and Upgrade of Oracle Applications R12 or later on Enterprise Linux/UNIX/AIX. Oracle Applications Database in 12.x and 19.x or higher versions. Architecture understanding,

analysis and solving issues across multiple layers of the stack. AWR and ADDR reporting and required system analysis.

- Middleware Components - Middleware components like Oracle WebLogic server, OID etc
- Backups, Recovery, tuning, Database design - Oracle RDBMS internals, Backup & Recovery using RMAN. Performance tuning, security configurations, logical and physical design of database of Enterprise environment and supporting critical production databases and applications and manage large databases. Installing, configuring, upgrading and administering different versions of Oracle Database, Automatic storage management, Disaster Recovery site. Upgrade and database migration from one platform to another using various tools like Oracle Data Pump, RMAN and TTS/XTTX. Managing Oracle Enterprise Manager. Replication Technologies, knowledge of SAN/CAS, Database performance tuning etc. Troubleshooting memory related errors with Oracle 12c/19.x and Patching with RAC and Non RAC.
- Other areas - Understanding Shell scripting, PL/SQL, software networking, SSL/TLS certificate deployment

**NHSRCL Exam Pattern & Syllabus for the post of  
Assistant Manager (Procurement)  
advertised against vacancy notice no. 04/2025**

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- There will a total of 100 question.
- Each question will carry equal mark.
- There will be negative marking for every wrong answer.
- 1/4 Mark will be deducted for wrong answer.
- Duration of paper will be 90 Minutes.

**Exam Pattern**

Subject	Maximum Question	Maximum Marks	Duration of Paper
General Awareness	10	10	90 Minutes
General English	10	10	
General Intelligence, Reasoning & Quantitative Aptitude	10	10	
Knowledge of Discipline	70	70	

## Syllabus for Assistant Manager (Procurement) Examination

### General Awareness

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

### General English

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### General Intelligence, Reasoning & Quantitative Aptitude

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
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- Average
- Simple & Compound Interest

### Knowledge of Discipline

- Knowledge of procurement methods including e-procurement portals, Reverse Auction, GeM, Eols, Domestic as well as international bidding.
- Good Knowledge of Procurement/Contract Act, rules and frameworks issued by Government of India, Contract Act, Sale of Goods Act. Knowledge of International procurement contract conditions applicable for externally aided projects like FIDIC, shall be preferred.

- Knowledge of Procurement of Goods/Services/Works procedures, guidelines, technical, commercial and legal aspects of procurement contract and supply chain management activities.
- Knowledge of contract termination, dispute resolution procedures, handling variations, claims and issues of post contract.
- Knowledge of office documentation procedures, preparing proposals/estimates, BOQ based tender drafting skills.
- Proficiency with working software including using ERP SCP module, MS Word, MS Excel and MS PowerPoint.

**NHSRCL Exam Pattern & Syllabus for the post of  
Assistant Manager (General)  
advertised against vacancy notice no. 04/2025**

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**NHSRCL Exam Pattern**

This examination will be conducted on Computer Based Mode. The paper will consist of Multiple-Choice questions of Objective Type. In this paper, question will be asked from General Awareness and Knowledge of Discipline.

- There will a total of 100 question.
- Each question will carry equal mark.
- There will be negative marking for every wrong answer.
- 1/4 Mark will be deducted for wrong answer.
- Duration of paper will be 90 Minutes.

**Exam Pattern**

Subject	Maximum Question	Maximum Marks	Duration of Paper
General Awareness,	30	30	90 Minutes
Knowledge of Domain	70	70	

**Syllabus for Assistant Manager (General) Examination**

**General Awareness**

- Current Affairs (National and International)
- Major Financial / Economic News
- Physical & Economic Geography
- Indian History and Culture
- Indian Polity and Constitution.
- General Information about High-Speed Railways.

## **Knowledge of Domain (General Intelligence, Reasoning & Quantitative Aptitude, General English, Office Procedures & File Management, Computer Literacy)**

### **General Intelligence, Reasoning & Quantitative Aptitude**

- Spatial Visualization.
- Visual Memory.
- Discrimination.
- Non-verbal series.
- Analogies.
- Observation.
- Coding and Decoding
- Arithmetic Number Series.
- Arithmetical Reasoning.
- Similarities and Differences
- Figures Classification.
- Relationship concepts.
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- Number System
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- Time & Work
- Profit & loss
- Average
- Simple & Compound Interest

### **General English**

- Vocabulary & Grammar
- Antonyms & Synonyms and its correct usage.
- Basics of English Language.
- Sentence structure.
- Reading Comprehension

### **Office Procedures and File Management**

- Correspondence handling
- Noting and drafting
- File movement & tracking
- Record keeping

### **Computer Literacy**

- Basic Computer Operations
- MS Office Suite (Word, Excel, Power Point)
- Internet Usage