

### GRSE Supervisor Exam Pattern

Paper	Subjects	Number Of Questions	Number Of Marks
<b>Part-A</b> (10th Standard)	General Knowledge, Aptitude, Mental Ability, Data Analysis, English, Numerical Ability & Reasoning	20	20
<b>Part-B</b>	Mechanical, Electrical, Civil, Computer Science/IT, Electrical Electronics Finance Pharmacy Security Management	80	80
Total		100	100

- The exam pattern will be in objective-type questions
- The total marks for the exam is 100 marks
- The time duration of this exam is 2 Hours
- The question paper will be in bi-lingual i.e English & Hindi

### GRSE Assistant Engineer Syllabus - Topic Wise

#### Part A – 10th Standard

##### General Knowledge

- Important Days
- Awards and Honors
- Abbreviations
- Indian National Movement
- Sports
- Current Affairs – National and International
- General Policy
- Indian History
- Countries and Capitals
- Capitals of India
- Indian Economy
- Science – Inventions & Discoveries
- Books and Authors
- Science and Technology
- International and National Organizations
- Budget and Five-Year Plans

##### Aptitude & Mental Ability

- Square Root and Cube Root.

- Probability.
- Stocks and Share.
- Boats and Streams.
- Simple Interest.
- Surds and Indices.
- Numbers.
- Races and Games.
- Banker's Discount.
- Allegation or Mixture.
- Chain Rule.
- Logarithm.
- Time and Distance.
- Simplification.
- Average.
- Time and Work.
- Problems based on H.C.F & L.C.M.
- Compound Interest.
- Volume and Surface Area.
- Decimal Fraction.
- Partnership.
- Ratio and Proportion.
- Permutation and Combination.
- Problems with Ages.
- Height and Distance.
- Pipes and Cistern.
- Area.

### **Data Analysis**

- Graphs
- Column Graphs
- Bar Graphs
- Line Charts
- Pie Chart
- Graphs representing Area.
- Venn diagram etc Geometry (Lines, angles, Triangles, Spheres, Rectangles, cubes, Cone, etc.)
- Ratios and Proportion
- Percentages In-equations Quadratic and linear equations
- Algebra
- Profit & Loss
- Averages
- Partnership (Accounts)
- Time-Speed-Distance
- Geometric mean
- Work and time
- Number system
- HCF & LCM
- Geometric Progression
- Arithmetic progression

- Arithmetic mean
- Harmonic mean
- Median Mode
- Number Base System
- BODMAS
- Menstruation
- Allegation & Mixtures Work
- Pipes and Cisterns
- Simple Interest & Compound Interest
- Set Theory
- Installment Payments
- Clocks
- Probability
- Permutations & Combinations
- Trigonometry
- Vectors
- Binomial Expansion
- Coordinate geometry
- Logarithm
- Calendar
- Maxima & Minima Progression
- Surds & Indices Complex numbers

### **English**

- Spellings/ Detecting Mis-spelt words
- Antonyms and their correct usage
- Common Error
- Active/ Passive Voice of Verbs
- Comprehension Passage
- Spot the Error
- Cloze Passage
- Fill in the Blanks
- Shuffling of Sentence parts
- Conversions
- Sentence Rearrangement
- Grammar
- Shuffling of Sentences in a passage
- Improvement of Sentences
- Synonyms/ Homonyms
- Antonyms
- Vocabulary
- Idioms & Phrases
- One-word substitution

### **Numerical Ability & Reasoning**

- Visual Memory
- Clocks
- Discrimination

- Space Visualization
- Odd man out
- Symbolic/ Number Classification
- Analytical Reasoning
- Letter series
- Arithmetical Number Series
- Relationship Concepts
- Coding-Decoding
- Figural Classification
- Similarities
- Shapes and Mirror
- Arithmetical Reasoning
- Venn diagrams
- Non-Verbal Test
- Semantic Analogy
- Number series
- Problem Solving

## **Part B – Engineering**

### **Mechanical**

- Engineering Mechanics.
- Engineering Materials.
- Mechanisms and Machines.
- Fluid Mechanics.
- IC Engines, Refrigeration, and Air conditioning.
- Turbo Machinery.
- Thermodynamics and Heat transfer.
- Power Plant Engineering.
- Renewable Sources of Energy.
- Design of Machine Elements.
- Manufacturing.
- Industrial and Maintenance Engineering.
- Mechatronics and Robotics.

### **Electrical**

- Basic Electronics Engineering.
- Electrical Materials.
- Power Systems.
- Power Electronics and Drives.
- Analog and Digital Electronics.
- Systems and Signal Processing.
- Control Systems.
- Electrical Machines.
- Electrical and Electronic Measurements.
- Engineering in Mathematics.
- Electric Circuits and Fields.
- Computer Fundamentals.

## **Electronics**

- Advanced Communication Topics.
- Basic Electronics Engineering.
- Electronic Measurements and Instrumentation.
- Network Theory.
- Analog and Digital Circuits.
- Analog and Digital Communication Systems.
- Control Systems.
- Computer Organization and Architecture.
- Electro Magnetics.
- Advanced Electronics Topics.
- Basic Electrical Engineering.
- Materials Science.

## **Civil**

- Flow of Fluids, Hydraulic Machines, and Hydro Power
- Fluid Mechanics, Open Channel Flow, Pipe Flow
- Hydraulic Machines and Hydropower
- Hydrology and Water Resources Engineering
- Environmental Engineering
- Water Supply Engineering
- Building Materials
- Structural Analysis
- Design of Steel Structures
- Design of Concrete and Masonry structures
- Construction Practice
- Air, Noise pollution, and Ecology
- Planning and Management
- Waste Water Engineering
- Solid Mechanics
- Solid Waste Management
- Geotechnical Engineering and Foundation Engineering
- Surveying and Geology
- Transportation Engineering
- Highways
- Tunneling
- Railways Systems
- Harbors
- Airports

## **Computer Science/ IT**

- Knowledge of C++
- Operating Systems – DOS
- PHP
- MS SQL Server
- Oracle PL\_SQL Architecture
- ASP.NET

- ADO.NET
- Java & JavaScript
- Manageable switch/router & wireless LAN with the network security
- Firewall & antivirus
- UML
- Object-Oriented designing
- Proposing and creating architecture and re-usable libraries in.NET
- JavaScript
- The query will be an added plus
- Networking with LAN/ WAN
- Novel
- Window OS client & server & Linux OS-client & server.
- Web Services
- Window Services
- JSON
- Grid Computing, Distributed
- OS
- Image processing, Digital signal processing
- Image processing
- VLSI
- Embedded System

## **Finance**

- Taxation laws and planning
- Management of banking and insurance
- Security analysis and portfolio management
- Financial derivatives
- Project
- Management of financial service and institution
- Financial management and infrastructure finance
- Strategic cost management and control
- Computer networks and internet
- Multinational financial management
- Financial management
- Marketing management
- Human resource management
- Operational and supply chain management
- Business research methodology
- Operations research
- Management concept and application
- Managerial economics
- Organizational behavior
- Quantitative analysis
- Accounting for managers
- Computer application in management
- Business communication skills
- Business environment

## **Pharmacy**

- Medication Management, Safety & Quality
- Therapeutics, Diseases & Populations
- Pharmacy Management & Ownership
- Profession, Academics & Economics

### **Security Management**

- Health & safety awareness
- Customer care
- Conflict management
- Physical restraint
- Control and self-defense
- The study of relevant laws
- Fire safety
- First aid
- Access control
- Private detainment and arrest procedures
- Communications
- Criminology
- Fitness
- IT Applications and other technology such as monitoring of closed-circuit television, and administrative procedures such as report-writing