

HRRL Exam Pattern

Sl.No	Subject Names
Part I	General Aptitude (Intellectual Potential test, testing Logical Reasoning & Data interpretation, Quantitative Aptitude test, test of English Language)
Part II	(Technical/ Professional Knowledge comprising of questions related to Qualifying degree / Educational background/work experience required for the position applied for)

Minimum Qualifying Marks

WRITTEN TEST	GROUP TASK & PERSONAL INTERVIEW
<ul style="list-style-type: none"> Minimum qualifying marks in Domain section for all positions except Law: 50% for all categories. Minimum qualifying Overall Marks (i.e. Domain + Aptitude) Marks: 60% for UR & 54% (SC/ST/PWD/OBCNC) Minimum qualifying marks for Law (S/G E1) is 60% of total marks for UR/EWS & 54% for SC/ST/OBCNC/ PwBD. Written Test scores are included in drawing Final Merit List 	<ul style="list-style-type: none"> Minimum Qualifying Marks to be obtained (40% for UR & EWS, 33.33% for SC/ST/PWD/OBCNC) For Law(S/G E1): Minimum Qualifying Marks (40% for UR; 33.33% for SC/ ST/ PWD/ OBCNC) to be obtained in Moot Court & Personal Interview combined.

FINAL SCORING:

Minimum qualifying Marks is 60% for UR/ EWS, 54% for SC/ ST/ OBCNC/ PwBD in combined scores of Computer Based Test + Group Task+ Moot Court (only for Legal position) +Personal Interview.

HRRL Syllabus - Topic Wise

Data Interpretation

- Bar Graph
- Line Chart
- Tabular Form
- Caselet Form

- Radar/Web
- Pie Chart
- Missing Data Interpretation

Reasoning

- Analogy
- Series Completion
- Verification of truth of the Statement
- Situation Reaction Test
- Direction Sense Test
- Classification
- Data Sufficiency
- Alpha-Numeric Sequence Puzzle
- Puzzle Test
- Blood Relations
- Coding-Decoding
- Assertion and Reasoning
- Arithmetical Reasoning
- Operations of Mathematics
- Venn Diagrams
- Word Sequence
- Missing Characters
- Sequential Output training
- Directions
- Test on Alphabets
- Eligibility Test
- Dot Situation
- Identical figure groupings
- Forming figures and analysis
- Construction of Squares and Triangles
- Series
- Analytical Reasoning
- Paper Folding
- Paper Cutting
- Cubes and Dice
- Water Images
- Mirror Images
- Figure Matrix
- Completion Incomplete Pattern
- Spotting embedded figures
- Classification
- Rules Detection

Quantitative Aptitude

- Time and Work Partnership
- Ratio and Proportion
- Boats and Streams
- Simple Interest
- Time and Distance
- Problems on Trains
- Areas
- Races and Games
- Numbers and Ages
- Mixtures and Allegations
- Mensuration
- Permutations and Combinations
- Problems on L.C.M and H.C.F
- Pipes and Cisterns
- Percentages
- Simple Equations
- Problems on Numbers
- Averages
- Indices and Surds
- Compound Interest
- Volumes
- Odd Man Out
- Quadratic Equations
- Probability
- Profit and Loss
- Simplification and Approximation

English Language

- Idioms and Phrases
- Sentence Improvement
- Synonyms
- Sentence Arrangement
- Substitution
- Prepositions
- Antonyms
- Fill in the blanks
- Passage Completion
- Spotting Errors
- Substitution
- Sentence
- Active and Passive Voice
- Completion
- Spelling Test
- Error Correction (Underlined Part)
- Transformation

- Para Completion
- Joining Sentences
- Error Correction (Phrase in Bold)

Technical Topics

Mechanical Engineering

- 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 Engineering

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

Civil Engineering

- The 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
- Planning and Management
- Waste Water Engineering
- Solid Mechanics
- Solid Waste Management
- Air, Noise pollution, and Ecology
- Geotechnical Engineering and Foundation Engineering
- Surveying and Geology
- Transportation Engineering
- Highways
- Tunneling
- Railways Systems
- Harbours
- Airports

Instrumentation Engineering

- Digital Electronic Circuits
- Electrical Measurements
- Electronics Instruments
- Analog Electronics
- Analytical, Optical & Bio-Medical Instrumentation
- Instrumentation
- Signals & Systems
- Control Systems
- Electronics Circuits
- Fundamentals
- Microprocessors and Micro Computers

Chemical Engineering

- Atoms and Molecules.
- Reaction Dynamics.
- Electrochemistry.
- Stereochemistry.
- Spectroscopic Techniques.
- Organic Reactions.
- Photochemistry.
- Transition Metal Chemistry.