

**Syllabus for Entry-Level post of
Category-I: Technician (Maintenance, Workshop, General Services)
Pay Level 2 of 7th CPC Pay Matrix**

The questions in parts A,B,C,D & E will be of a level commensurate with the essential qualification viz. 10th Standard for Technician (Maintenance, Workshop, General Services) Pay Level 2 of 7th CPC Pay Matrix.

- A. **General Awareness (20 MCQ):**
Questions will be designed to test the ability of the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to Sports, History, Culture, Geography, Economic scene, General Polity including Indian Constitution, and Scientific Research etc.
- B. **Mental Ability and Reasoning (20 MCQ)**
It would include questions of non-verbal type. The test will include questions on similarities and differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discriminating observation, relationship concepts, figure classification, arithmetical number series, non-verbal series etc. The test will also include questions designed to test the candidate's abilities to deal with abstract ideas and symbols and their relationship, arithmetical computation and other analytical functions.
- C. **General English (20 MCQ)**
Candidates' understanding of the Basics of English Language, its vocabulary, grammar, sentence structure, synonyms, antonyms and its correct usage, etc. and writing ability would be tested.
- D. **Arithmetic (20 MCQ)**
The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, menstruation time and distance ratio and time etc.
- E. **Basic Science (20 MCQ):-**
Matter-its nature and behavior (Nature of matter, Particle nature, Basic units, Structure of atoms), Organization in the Living world (Cell-basic unit of life, Tissues, Organs, Organ system, Organism, Biological diversity, Health and

Diseases), Motion, Force and Work (Motion, Force and Newton's Laws, Gravitation, Floatation, Work, Energy and Power, Sound), Our Environment (Physical resources, Bio-geo chemical cycles in nature), Food Production.

Chemical substances-Nature and behavior (Chemical reactions, Acids, Bases and Salts, Metals and Non-metals, Carbon compounds, Periodic classification of elements), World of living (Life processes, Control and co-ordination in animals and plants, Reproduction, Heredity and evolution), Natural phenomena (Laws of reflection, Laws of refraction, Functioning of human eye, Lens etc.), Effects of current (Electric current, Potential difference and electric current, Ohm's law, Resistance, Resistivity etc.), Magnetic effects of current (Magnetic field, field lines, Fleming's LHS, RHS etc.), Natural resources (Sources of energy, Our environment, Management of natural resources)

Trade Test

Over and above the written test based on the aforementioned syllabus, this category of candidate shall also have to undergo a trade test based on their respective trade as may be decided by the respective Directors of the Institute.

Syllabus for the Post of Forest Guard

A. General Awareness (30 MCQ):

Questions are designed to test the candidate's general awareness of the environment around him and its application to society. Questions are also designed to test knowledge of current event and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economics, General Policy and science.

B. Arithmetic & Mental Ability and Reasoning (30 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, menstruation time and distance ratio and time etc.

It would include questions of both verbal and non-verbal type. The test will include questions on Semantic analogy, Symbolic operations, Symbolic/Number analogy, Trends, Figural analogy, Space orientation, Semantic classification, Venn diagrams, Symbolic/ Number classification, Drawing inferences, Figural classification, Punched hole / Pattern-folding and unfolding, Semantic series, Figural pattern-folding and Completion, number services, Embedded figures, Figural series, Critical thinking, Problem solving, Emotional intelligence, Word building, Social intelligence, Coding and decoding, other sub-topics, if any numerical operations.

C. General English (10 MCQ)

Spot the error, Fill in the blanks, Synonyms/Homonyms, Antonyms, Spellings/Detecting mis-spelt words, Idioms & phrases, One word substitution, Improvement of sentences, Active/Passive voice of verbs, Conversion into Direct/Indirect narration, Shuffling of Sentence parts, Shuffling of Sentences in a passage, Cloze Passage, Comprehension Passage.

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D. Science of Intermediate level(30 MCQ):-

Chemistry

Some basic concepts of Chemistry, Structure of atom, Classification of elements and Periodicity in properties, Chemical bonding and Molecular structure, States of matter: Gases and Liquids, Thermodynamics, Equilibrium, Redox reactions, Hydrogen, s-Block elements (Alkali and Alkaline earth metals), Group 13 and 14 p-Block elements, Organic chemistry-some basic principles and techniques, Hydrocarbons, Environmental Chemistry.

Solid state, Solutions, Electrochemistry, Chemical kinetics, Surface chemistry, General principles and processes of isolation of elements, Group 15,16, 17 & 18 p-Block elements, d and f Block elements, Coordination compounds, Haloalkanes and Haloarenes, Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic acids, Organic compounds containing Nitrogen, Biomolecules (Carbohydrates, Proteins, Hormones, Vitamins, Nucleic acids), Polymers, Chemistry in everyday life (Chemicals in medicines, Chemicals in food, Cleansing agents).

Physics

Physical world and measurement, Kinematics, Laws of motion, Work, Energy and Power, Motion of system of particles and rigid body, Gravitation, Properties of bulk matter, Thermodynamics, Behaviour of perfect gas and Kinetic theory, Oscillations and Waves

Electrostatics, Current electricity, Magnetic effect of current & magnetism, Electromagnetic induction and alternating current, Electromagnetic waves, Optics, Dual nature of matter and radiation, Atoms & nuclei, Electronic devices, Communication systems.

Biology

Diversity in living world, Structural organisations in Animals and Plants, Cell structure and function, Plant physiology (Transport in plants, Mineral nutrition, Photosynthesis, Respiration, Plant growth and development), Human physiology (Digestion and absorption, Breathing and Respiration, Body fluids and circulation, Excretory products and their elimination, Locomotion and Movement, Neural control and coordination, Chemical coordination and regulation).
