

**Proposed Syllabus for selection to the post of JE (WS) against 25% DPQ
(Departmental Promotional Quota) of Mechanical Department.**

(Total Marks = 100)

1. SECTION-I:

(90 Marks)

A) GENERAL AWARENESS :

(50 Marks)

- Arithmetic (mensuration, distant & time, Percentage, Ratio, Simple Interest, Profit & Loss): (10 marks)
- General Science (upto class 10th Standard): (05 marks)
- General Knowledge: (05 marks)
- General English: (05 marks)
- Logical Reasoning (Basic Concepts): (05 marks)

- Basic knowledge regarding Establishment rules such as Leave rules, Pass rules, D&A rules, Settlement benefits etc.
- Knowledge about Indian Railways and Workshops including layout, organization structure, different sections of the workshop.
- Knowledge regarding Safety Equipments used in Factories.
- General concepts regarding on Stores drawals and disposal procedures including Stock & Non-Stock items.
- Basis engineering consisting of Dimensions, Measurements and Gauges. (20 marks)
- Must have knowledge of different type of handling equipment and Machinery available in workshop.
- Payment of wages Act, Factories Act, Workman compensation Act and various Acts applicable to factory.
- Group Incentive System procedure and working.
- Basic knowledge of ISO: 9001, 14001 & 18001.
- Familiarities with personal computer operating system, hardware and software etc.

B) TECHNICAL:

(40 Marks)

- Basic knowledge regarding different type of Rolling Stock (coaching).
- Repair procedure of under frame, body, bogies and its modifications.
- Air Brake, Draw and Buffing Gear including CBC, Rolling Gear viz. Wheel & Roller Bearing, Interior fittings and Painting.
- Basic features about POH & IOH, Special repairs and corrosion repairs etc.
- Knowledge of various Machines used in Machine, Wheel, Lathe & Tool Room shops.

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- Manufacturing process of coach components in Machine shop.
- Knowledge of various types of tools, their composition, grinding angles usage etc.
- Knowledge of speeds and feeds for different materials for various types of machines.
- Knowledge of various kinds of paints used in Railway Workshops & Coaches.
- Effects which can be developed in paints and the remedial action to eliminate those.
- Preparing the surface and the role of different types of paints in protecting the material.
- Procedure adopted for preventing corrosion of coaches and Paint schedules.
- Mixing and Inspection of paints.
- Knowledge of all types of maintenance practices.
- Knowledge of overhauling and repair practices of EOT Cranes, Traversers, Machinery and Furnaces, Steam Diesel Pumps, Petrol & Diesel Engines and Pneumatic Equipments, Road Vehicles.
- Knowledge of repair and periodical testing of cranes, chains and wire ropes and certifying / maintenance of records.
- Knowledge of manufacturing and procurement of spares for maintenance of Machinery.
- Knowledge of all types of Industrial Oils.
- Knowledge of safety precautions in Gas & Arc Welding.
- Brief knowledge of advanced welding process viz. Friction, Explosive, Ultrasonic, Electron beam & Micro Plasma welding.
- Classification of Electrodes and their uses.
- Welding of stainless steel coaches & silco manganese steel components.
- Defect in Gas & Arc Welding Techniques and their remedies.
- Knowledge of pre heating & post heating and its necessities.

2. SECTION-II:

(10 Marks)

RAJBHASA:

(10 Marks)

- Rule 3/3
- Implementation of Rajbhasha in Workshops.
- Various categories of regions based on Rajbhasha.

OR

Question from Section-I(GENERAL AWARENESS & TECHNICAL) :(10 Marks)