

South Eastern Railway
Ranchi Division

Syllabus for selection for the post of Junior Engineer (C&W) in Level-6 against 25% Intermediate apprentice quota and all other equivalent exams for the post of Junior Engineer (C&W) in Level-6 in Mechanical (C&W) department of Ranchi Division.

- Different type of goods stock & their special features. Different types of freight stocks-BOXN, BCN, BLC/BLL wagons, BOBRN wagons, BOXN HL wagons, Tank wagons, etc. and its special features new wagon numbering system. Transportation codes for freight stock
- Different type of examination regular to maintain goods stock at yard. BPC and its colour code, validity BPC, calculation of Bk. Power. Name & functions of different components of wagon-Wagon body, door & floor, Under frame, Trolley and trolley components Bearing, Air brake equipments, Brake gear equipment, CBC & CBC components, Suspension arrangement & Wheel & Axle.
- ROH of wagons, dismantling of bogie and body. Stripping of trolley, Measurement of trolley and its parameter. Recent development in freight stock.
- Types of CASNUB bogie and its features. Use of different types of gauges for trolley measurement. Wagon defects IRCA rule & NTXR.
- Different types of wheel defects its limit and their adverse effect on wagon. Different versions of CASNUB Bogie & Its features.
- Air brake system. SWTR & RTR practical training at sick line & yard. Different type of Yard examinations & Maintenance of freight stocks, ROH Sick line repair, GDR and BPC
- Components of CBC with their wear limit & checking with gauges. Brake Binding, Train parting and Hot Axle. Roller Bearing failure- causes & remedial measures.
- Function of DV, SAB, ELB, LSD, L/ETR & DOM cylinder. Trouble shooting in section.
- Different JPO's for freight examination, important wagon modification CC+8.25T axle load, EL wagon.
- Train parting .bk, Binding and prevention, Analysis of train parting.
- Coaching : Syllabus as per Annexure 'A'.
- Derailment, Accident : Type of derailment, duty of C&W supervisor at the site of accident/derailment track reading : Preservence of clue etc.
- Weighbridges: RDSO specification, different components and maintenance.
- Establishment: Pass, Leave, & D&A rule, HOER, Retirement benefit.
- Infrastructural facilities required for sick line, ROH depot and yard as per CAMTECH.
- IRCA rule & NTXR. In-motion Weigh Bridge & WILD

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Coaches – Different types of coaches, coach shell, Codal life, Buffer height adjustment, suspension arrangement, Revised maintenance pattern for coaching train, washing and cleaning of coaches, maintenance schedules to be followed in coaching depot primary/secondary maintenance , schedule 'A' schedule 'B', IOH, POH, must change item during POH, preparation of brake power certificate , DRS card coach failure report .

Name & functions of different components of coach-(ICF, RCF & LHB Coach Shell), (ICF, BMBC & Fiat Bogie & bogie components), Roller bearing, Draw and Buffing gear Air brake equipments, Brake gear equipments, Suspension arrangement, Wheel & Axle, Coach interior fittings, Safety and passenger amenities, Furnishing materials, PEV & PEASD.

Maintenance Schedules –IOH/C- schedule, A,B & C schedules, Trip schedules, Revised maintenance pattern of coaching maintenance, Rolling in examination, terminating examination, Watering, Axle box temperature measurement, Coach cleaning-exterior & Interior.

Maintenance schedules of LHB coaches, Air brake testing-RTR,SWTR and Calculation of brake power. Air brake testing-RTR,SWTR and Calculation of brake power. Corrosion in Coaching stock. High Speed Coaches. DRS Card, Coach failure and warranty claim. Air brake testing-RTR,SWTR and Calculation of brake power. New developments in coaching stocks.

Bogie: Construction of all coil ICF bogie and load transmission , permissible clearance under tare condition, grouping of coil spring, centre pivot arrangement & side bearer arrangement with wear limits for wearing piece and wearing plate. Examination and repair practice for bogie (ICF,FIAT) in maintenance depot.

Air brake system - Twin pipe air brake system principle of operation , functioning and maintenance slack adjuster.

Bogie mounted air brake system : Principal of operation , description and maintenance of bogie mounted brake cylinder.

LHB coaches : Design features, different maintenance schedules.

Hybrid coaches : design features and maintenance.

Draw and Buffing Gears : Draw gear, screw coupling, CBC and side buffer.

Rolling Gear; Wheel and axle, wheel defects, roller, bearings, worn wheel profile, roller bearing defects.

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Mechanical coaching cleaning, CTS & OBHS

Linen Management: Mechanised cleaning of linen.

OTHERS:

- 1) Official language policy and rules.
- 2) Different class of Accidents, Disaster Management in Indian Railways, ART & ARME.
- 3) Derailment Mechanism site measurement and investigation.
- 4) Stores- Stock & Non Stock items, Store imprest, Stock and Non Stock requisitions, Inventory control, Scrap disposal, Material procurement.
- 5) Establishment matters- Pass rules, Leave rules, D&A rules, HOER, Retirement & Death benefits, Staff welfare etc.
- 6) Welding techniques of wagons & coaches.
- 7) Anathematic & Science up to 10+2 (HS) level and General knowledge.
- 8) Various Fitter tools & their uses.
- 9) Vernier & Micrometer scale & their use.

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