



मध्य रेलवे /Central Railway

मंडल कार्यालय/ Divisional Office
कार्मिक शाखा/ Personnel Branch
सोलापुर/ Solapur.
दिनांक:-14/11/2024

संख्या:SUR/P/General/ Notification

सभी सम्बंधित : सोलापुर मंडल

विषय: Formation of panel for the post of AEEE/ADEE (Group-B) Level-8 PB-9300-34800 GP-4800/- against 70% selection quota in Electrical Department Vacancy cycle from 01/01/2025 to 31/12/2026.

संदर्भ: मुख्यालय कार्यालय द्वारा जारी पत्रांक P/CR/HQ/Gaz-Sel/260/2/AEEE (70% selection)-2 दिनांक 13/11/2024.

मुख्यालय कार्यालय द्वारा जारी पत्रांक P/CR/HQ/Gaz-Sel/260/2/AEEE (70% selection)-2 दिनांक 13/11/2024 की प्रति अनुलग्नकों के साथ परिपत्रित की जाती है। समस्त जानकारी के लिए उपरोक्त अधिसूचना सोलापुर मंडल की वेबसाइट www.cr.indianrailways.gov.in पर अपलोड किया गया है, इस प्रकार से विजिट कर About us > Divisions > Solapur > Personnel > **Notification** सेक्शन में देखें।

अनुलग्नक : यथोक्त।

(रमेश नायर)

सहायक कार्मिक अधिकारी
कृते मंडल रेल प्रबंधक (कार्मिक) सोलापुर

प्रतिलिपि :

DRM, ADRM सोलापुर, कृपया सूचनार्थ।

मंडल सचिव: NRMU, CRMS, AIOBCREA & AISCSTREA:सोलापुर, कृपया सूचनार्थ।

NOTIFICATION

CENTRAL RAILWAY

Headquarters Office,
Personnel Branch,
CSMT Mumbai.

No. P/CR/HQ/Gaz-sel/260/2/AEEE(70%selection)-2

Date : 13.11.2024

CAO(C) , PCEE, PCME, PCOM
DRM(P) BB, BSL NGP, SUR, PA
SR. DOM BB, BSL, NGP DOM SUR PA
SR. DEE(TRO) BB, BSL NGP, PA
SR. DEE(TRS) BB, BSL CLA, KLW, KYN SNPD, AQ, NGP
SR DEE(TRD) BB, CLA, BSL, NGP DEE(TD) PA CLA KYN, LNL, PNVL
Sr. DEE(G) BB, BSL NGP SUR PA
CWM PR, MTN, TMW NKRD, ELW BSL CPM(CONV) WB PZRI/BSL, PCETI/THK,
Dy.CPO(C) HQ Dy. CEE(G) MTN, Dy. CEE(EMU) MTN,

Sub: Formation of panel for the post of AEEE/ADEE (Group 'B') Level-8/PB-9300-34800 GP-4800/- against 70% selection quota in Electrical department- Vacancy cycle from 01.01.2025 to 31.12.2026.

1. It has been decided to conduct a selection for promotion to Group 'B' services as AEEE/ADEE, Level-8 (PB-9300-34800 PB-2+GP-4800/-) against 70% selection quota in Electrical Deptt for the vacancies as per selection procedure laid down in Railway Board's letter No. E(GP)88/2/111 dated 20/08/1991 E(GP)2018/2/31 dated 19.03.2019, No. E(GP)2022/2/4 dated 28.06.2022 & No. E(GP)2024/2/28 dated 08.10.2024.

** Break up of number of assessed vacancy is as under:

Post	Scheme	UR	SC	ST	Total	PwBD *
AEEE/ADEE	70% selection	24	05	04	33	03

* PwBD is not shown separately but included in the total vacancies.

**The vacancies notified are provisional including Communal Break up & PwBD, may vary before the closing date of Online application.

Railway Board vide letter dated 18.08.2022, has introduced the reservation to PwBD in promotion from Gr C to Gr B in selection as well as in LDCEs. Hence, the categories identified for the post of AEEE/ADEE are 02(HH) & 01(LD)(as indicated by PHOD) for the vacancy cycle for the period from 01.01.2025 to 31.12.2026. If suitable candidates of the said PwBD category are not placed on the panel of 70% selection against the notification, these points of 02(HH) & 01(LD) will be carried forward in 30% LDCE quota.

2. As per Para 2(i) of Railway Board's Rly. Bd's L. No: E(GP)2019/2/25 dated 27.12.2019 & E(GP)88/2/28 dated 08.10.2024 & E(GP) 2005/2/87 dated 18.08.2015, this selection is open to;

(A) All Gr 'C' staff who have completed 3 years Non fortuitous service in Level-6 / GP- 4200/ and above (including non fortuitous service rendered in the corresponding pre revised grades) as on 01.01.2025 of all groups of Technical Supervisors in Electrical department including Drawing cadre, staff working in TRO under Executive of Electrical Department.

(B) This selection is also open to following Electrical Loco Running (Common Cadre) Gr. 'C' staff who have completed 3 years Non fortuitous service (**including non fortuitous service rendered in the corresponding pre revised grades**) as on 01.01.2025.

Sr No	Designation	Scale of Pay Applicable (VII/VI CPC)
1	Loco Pilot(Mail/Exp)	Level-6/GP-4200+1000(Add All)
2	Loco Pilot(Passenger)	Level-6/GP 4200+500 (Add All)
3	Loco Pilot(Goods)	Level-6/GP 4200
4	Loco Pilot I (Shunting)(NF)	Level-6/GP 4200
5	Loco Pilot(Shunting) II	Level-5/GP 2400

The service rendered as Sr. Asstt Loco Pilot(NF) (80%) in PB-1+GP-2400 should not be taken into consideration for calculating 3 years non fortuitous service.(Ref: Rly Bd's letter No: E(GP) 2005/2/87 dated 18.08.2015)

For the purpose of counting service for eligibility, time spent by Railway servants during pre-requisite training immediately before appointment to working post is counted as qualifying service (Railway Board's letter No. E(NG)I-2019/PM1/24 dated 25.06.2019) .

Grade Pay in MACP will not be considered.

4. It has been decided to call applications online from the applicants and scrutiny of service particulars will also be done electronically at each level i.e division/workshop/Unit and Headquarter.

The employees may be advised to take utmost care while filling up of the proforma since incomplete/wrongly filled proforma will be rejected and no representations in this regard will be entertained.

The tentative schedule will be as under :-

Sr.No.	Subject	Scheduled date
1)	Date to open GOAL window	14.11.2024
2)	Last date to apply by the employee	03.12.2024
3)	Last date to forward the application by respective depots to their Bill preparing Unit.	05.12.2024
4)	Last date to forward the application after verification by Bill preparing Unit to HQ's office	18.12.2024
5)	Date of issue of Eligibility list	31.12.2024
6)	Date to raise objection on Eligibility list , if any	06.01.2025
7)	Pre-promotional Training for 60 Hrs./15 working days	In between 15 th Jan 2025 to 10 th Feb 2025
8)	Date of Examination (CBT)	09.03.2025
9)	Supplementary Examination	23.03.2025

The supplementary Examination will be held only for those candidates who could not appear in the main examination for reasons beyond their control, authorization of which will be decided by the Competent Authority.

5. MODE OF APPLICATION

A: For staff of Open Line, Construction Unit and Workshop)



(I) HOW TO APPLY

The eligible staff should submit their application through **ONLINE MODE** only for which following steps should be followed.

1. Visit the Railnet site 10.31.3.3 /GOAL1/.
2. Go through the **NOTIFICATION**.
3. Click on **REGISTER**. Select Exam Code: **ELECTRICAL/AEEE/SELECTION/2025-26**.
(Select Exam Code with utmost care)
4. Fill up **PF No as User ID**, Your Mobile No. (the Mobile No. linked with HRMS) and Registered Email and **Submit**.
5. You will get a default Password generated and display as 12345, immediately on another screen will show for change of password .
6. Now go to **Home Page** and select **APPLY/LOGIN**
7. Again use your **PF No. as User ID** and **Password**.
8. Fill up the Application form with utmost care and after completing all the fields, click on **Submit** tab.
9. Take a print out and keep it for your record.

This will complete the submission of application for the candidate.

(II) HOW TO FORWARD APPLICATION.

For login, each **Division/Workshop/ Construction Unit** Incharge will obtain User ID and password from **APO(Gaz)**. After login **Division/Workshop/ Construction Unit Incharges** can view the details of applicants working under his control. To forward the application, just Click on **FORWARD** of each of the application. On Last date of submission of application by the candidate, respective **Division/Workshop/ Construction Unit Incharges** can get a summary of the applications which he/she has forwarded. He/She should take a print and keep it for the record with the signature of the Establishment incharge.

(III) HOW TO VERIFY THE APPLICATIONS

For login, Office Superintendent of Personnel deptt of the **Division/Workshop/ Construction Unit** with whom Service Registers are maintained will obtain User ID and password from **APO(Gaz)**. After login, OS can **View** as well as **Edit** the details of all applicants whose Service Registers are maintained in that office. After verifying Service Particulars of each employee from Service Record, OS can change it in Edit application, if there is / are any deviation/s. He/She should put **sign ✓ in the box** if he made any change in the particulars filled by the applicant and same remarks should be added in the remarks column. After verification, to forward the application just click on **FORWARD BUTTON** of each of the application.

(IV) HOW TO VALIDATE THE APPLICATIONS

For login, APO/Head of the Construction Unit with whom Service Registers are maintained will obtain User ID and password from **APO(Gaz)**. After login APO/Head of the Construction can view all applications whose Service Registers are maintained in that office and verified by his Office Superintendent. As per the Eligibility conditions for the selection for the post, APO/Head of the Construction Unit will valid or invalid the application by clicking on the **Valid/Invalid**. Then



all the applications be automatically forwarded to Headquarter for further scrutiny. On Last date of submission of application in Headquarter, Divisional Personnel Deptt / Workshop / Construction unit can get a summary of the applications he has forwarded. He/She should take a print and keep it for his/her record.

B: For staff working in any other Railway/Non Railway Organisation on Deputation

The staff working in RE organization or any other Railway/Non Railway Organisation on Deputation etc. should also login into as per Para 5 of A and follow the steps from 1 to 9. One copy of the print out of the application should be verified by the concerned Bill preparing Unit i.e where SR is maintained and same should be sent to APO (Gaz) by Ordinary dak or per bearer so as to reach on or before 18.12.2024 and one copy should be forwarded to the Division or Workshop where the lien is maintained on Central Railway. Division/Workshop is advised to forward the applications received from the employees working in any other Railway/Non Railway Organisation on Deputation etc. by confirming lien maintained on that Division/Workshop/ Construction Unit Incharges on or before 18.12.2024.

For any queries regarding login/ forwarding/Editing/Validating application please contact on Phone no: 011-53228(Office landline No) / Mobile Phone No:- 8828110621-APO(Gaz) (from 10.00 hrs to 18.00 hr on working days)

6. After receipt of applications through online mode of all the volunteers, appearing for the selection, the same will be further scrutinized at Headquarters' level and the list of eligible volunteers will be published later. The final eligibility list will also be notified on RAILNET site 10.31.3.3/pers on 31.12.2024. The Objection on the eligibility list, if any, should be made on or before 06.01.2024.

In terms of Railway Board's letter No.E(GP)2022/2/4 dated 07.10.2022 & No: E(GP)2018/2/31 dated 19/03/2019, the following pattern of examination has been adopted for the 70% selections to be conducted through Centralised Computer Based objective type examination (CBT) in all departments. In terms of Railway Board's letter No: .E(GP)2018/2/31, dated 19/03/2019 and 04.12.2023 the written examination shall comprise of one paper which shall have 100% Objective Type Multiple Choice Questions only. The paper will be of 100 marks.

a)Professional Subject including optional Questions on Official language policy	70 marks
b) Establishment and Finance Rules	30 marks
c) Qualifying marks	60 marks
d) Duration of Examination	02 Hrs

1(one) mark will be allotted for every correct answer.

There will be no negative marking for incorrect answers (Authority: Rly Bd's No. E(GP)2024/2/28 dated 08.10.2024).

Railways-wise list of candidates along with marks scored by them in the written examination will be prepared by DG/NAIR.

Medical & Viva-voce of successful candidates will be conducted by the respective Zones and Panel will be prepared.

7. The candidates, who qualify in written Test/CBT are required to undergo prescribed medical Examination in terms of para Para 530 (a) ,531 & 532 (1)) of IRMM Vol.I before allowed to appear for viva-voce, and if found fit as per Railway Board's letter No. E(GP)80/2/8 dated 31/10/1991 they will be called for viva voce.

In terms of Para 506 of IRMM (Vol I 2000 Edition), if a candidate is found medically unfit, an appeal against such a decision can be made within one month of the date of communication of medical

unfitness and no appeal will be considered after the expiry of one month.

8. A copy of syllabus for professional subject for 70% selection in Gr B posts along with syllabus for Establishment and Finance prescribed by Board vide letter No: E(GP) 2022/2/4 dated 07.11.2022 is enclosed as **Annexure 'A'** for information and guidance of the candidates.

9. Since in the assessment post is reserved only for SC & ST, Pre-promotional training will be imparted to eligible SC & ST candidates (Railway Board's letter No. E(GP)2010/2/39 dated 28.08.2019).

10. A senior officer in all the offices & establishment may be nominated who will be responsible to ensure that this notification is brought to the notice of all the candidates/eligible employees working in their respective organizations. In case, any employee has been posted to another organization on transfer/deputation basis or working against Ex. cadre post, it will be the responsibility of their parent office / Establishment to ensure that the notification is sent to that Establishment / Organization enjoining upon it to bring the same to the notice of concerned employee(s). Application of these employees, if any, should be obtained from these organizations and sent to this office duly verified for further scrutiny of their eligibility (Para 3(iii) of Railway Board's letter No. E(GP)87/2/72 dated 27/12/1991) on or before last date i.e. 18.12.2024.

11. The SRs, Leave a/c in favour of the employees, who apply in response to this notification should be updated in all respect (i.e. Educational Qualification) and kept ready to be sent to APO(Gaz), PCPO's office, at a short notice. Similarly, their APARs (in original) or attested copy of E-APARs if filled online for the last 7 years i.e. fiscal period ending 31/3/2018 to 31/03/2024 duly completed in all respect and countersigned by accepting authority i.e. HOD, DRM, ADRM etc., and also by disposing representations, if any, may also be kept ready to be sent to APO(Gaz), PCPO's office, at a short notice, whenever required, per bearer. While forwarding Service Register of the candidates belonging to reserved community, it may be ensured that Caste Certificate in prescribed format is available in their SR.

12. To ensure that the eligible staff avails the opportunity for appearing for selection, wide publicity should be given. Supervisor/Incharge should bring to the notice of all staff working under them about this selection.

13. As per Para 1 of PCPO's letter No.P/CR/HQ/RP/601-policy dated 05.08.2022 "Person belonging to reserved communities, who are appointed against selection on merit and not owing to reservation, will occupy the unreserved points and they should not be shown against reserved points".

The panel will be purely on provisional basis subject to further orders that may be passed by the Supreme Court in the Jarnail Singh batch of cases

Kindly acknowledge the receipt of this letter

DA :- As above


Copy to: PCPO - for kind information pl.

CPO(IR) CPO(G) - for kind information pl.

APO(Elect)

Copy to SDGM (V) w.r.t his letter No. 2011/03/V2/MISC dated 03/03/11

This information is available on RAILNET site 10.31.3.3/pers


(Ajay Raj)
APO(GAZ)
I-PCPO

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. E(GP)2022/2/4

New Delhi, dt:07/11/2022

The General Managers,
All Indian Railways/PUs.


(Kind Attn.:All PCPOs/PFAs/Dy.CPO(G) & Dy.CAO(G))

**Sub.: Promotions to Group 'B' posts on Indian Railways - Introduction of
Centralized Computer Based Multiple Choice Objective type
examination (CBT) in all departments having Organised Services**

Board has prescribed syllabus for written examinations held as part of 30% LDCEs for promotion to Group 'B' posts in all Organised Services. Besides this, syllabus for 70% Selection for promotion to Group 'B' post of APO has also been prescribed by Board. Now, in the context of introduction of Centralised CBT for 70% Selections and 30% LDCEs for promotion to Group 'B' posts, Board has prescribed syllabus of 70% Selections and have also modified the syllabus for 30% LDCEs for all Group 'B' posts in Organised Departments. Similarly, syllabus for Establishment & Financial Rules has also been prescribed.

2. A copy each of the Syllabus for professional subjects prescribed by Board for 70% Selections and 30% LDCEs for promotion to Group 'B' posts in all Departments having Organised services along with the syllabus for Establishment & Financial Rules is enclosed for information. These syllabi are applicable for Selections & LDCEs to be conducted w.e.f.1.1.2023.

DA:As above


(Meenakshi Saluja)
Dy. Director, Estt.(GP)-III
Railway Board
Ph. No. 233047250
E.mail ID- meena.1964@gov.in

Syllabus for promotion to Group- B posts - 70% selection and 30% LDCE.

Syllabus for Establishment Rules:

1. Organization of the Personnel Department in Railways objectives functions and policies of Personnel Department.
2. Recruitment and Training, Classification of Services, Recruitment in Different services, Railway Recruitment Boards & Railway Recruitment Cells Compassionate Ground Appointments, Initial & In Service Training, Refresher Courses, Central Training Institutes, Training Centers in Zones, Divisions & Workshops, Training Modules for different posts, Training under Apprentices Act, Online Training, APARs.
3. General conditions of service in Railways, Seniority, Lien, Inter Railway & Inter Division transfers, Deputation, Promotion Policy & methods. Selection, Suitability, Trade Tests, Leave Rules, Pass Rules, Joining Time Reservation policy, HOER, Overtime, Payment of wages, current CPC Pay Rules, Advances in Railways.
4. Manpower planning, Rightsizing & Benchmarking, creation, extension and surrender of posts, creation of posts against new assets, different types of posts including workcharged posts.
5. The Railway Servants (Discipline & Appeal) Rules, 1968 and related instructions.
6. The Railway Services (Conduct) Rules, 1966 and related instructions.
7. Retirement benefits, qualifying service, pension, family pension, commutation gratuity, new pension scheme.
8. Staff welfare, SBF, Railway institutes, Railway schools, Ex-gratia payment, Incentive Bouns Scheme, Staff Grievances Redressal Mechanisms.
9. Industrial relations in Railways, recognized trade unions, industrial disputes. The Industrial Disputes Act, 1947. The Industrial Relations Code, 2020. The Trade Unions Act, 1926, PNM, PREM, JCM, Various Associations & Informal Meetings.
10. The Factories Act, 1948. The workmen's Compensation Act, 1923. Functions of Labour Enforcement Officers, Right to Information Act.
11. The scope of Information Technology in Railway e – office. HRMS, IPAS , LIMBS, ARPAN, CPGRAMS, ANUBHAV etc.

Syllabus for Financial Rules:

1. Parliamentary Control over Railway Finance, Public Accountability, Cannons of Financial Propriety.
2. Railway Budget - Budgetary terms, Types of Budgets, Budget cycle, Demand of Grants, Budgetary and Financial Reviews.
3. Rules of Allocation - Classification of expenditure - Control of expenditure - Responsibility Accounting - Performance Budgeting - Exchequer Control - Financial Results of Working lines.
4. Works Programme - Financial justification of Works - Surveys - Preparation of Estimates - Capital Budget - Control over Capital Expenditure - Reappropriation of Funds.
5. Financial control over Stores Expenditure - Purchase and Stores Keeping Procedure - Inventory Control and ABC Analysis.
6. Financial & Cost Control in Railway Workshops/Sheds/Units.
7. Rules and procedure relating to Tenders and contracts for execution of works and Procurement of Stores, M&P Programme and RSP.
8. Procedure for Possessing and finalizing Audit Objections and Draft Paras.
9. Delegation of Powers.
10. Losses, Frauds and Embezzlements.
11. General Financial Rules
12. Government e-Market (GeM)
13. Classification of Railway Revenue (Earnings)
14. Information Technology in general with specific reference to Railway's IT Applications
15. Taxation matters with special focus on GST & Income Tax
16. Organization of CGA and C&AG
17. Any other topic felt necessary from time to time

Syllabus for 70% Selections for promotion to Group 'B' posts of AEE in Electrical Department.

A. Professional Subjects:

Part I: General Electrical Engg.

1. Electrical Circuits: Electrical Circuit Elements (Resistance, Inductance and capacitance), Voltage and Current Sources, Ohm's law, Kirchoff's Voltage and Current Laws, DC & AC circuit analysis.
2. Electronic Devices & Analog Electronics: Semiconductor Diodes, Diode Rectifiers, Bipolar Junction Transistor, JFET, MOSFET, Transistor Biasing Circuits.
3. Power Electronics: Characteristics and comparison of Power Diodes, BJTs, Thyristors, SCR, GTO, IGBT and Power MOSFET. One phase and Three phase uncontrolled and controlled rectifiers, Features and working of Variable Voltage Variable Frequency (VVVF) drives and its applications.
4. Electrical Engg. Materials: Properties & applications of Electrical insulating materials, Magnetic materials, Conducting materials & Semiconducting materials.
5. Electrical Machines: DC Machines, Induction Machines and Synchronous Machines. Losses in rotating machines. Single phase and three phase transformers. Losses and efficiency of transformers, Machine Drives.
6. Renewable Energy Sources: Climate change, Global warming, Various sources of Renewable energy- Resources and applications, Solar Cells, Rooftop solar and land based solar plants- Concepts of Basic Design, construction and maintenance, Off grid and Grid connected solar plants, Wind turbines, Net Zero carbon emission, ECBC, Round the clock green energy, Energy Storage systems, Policies and regulations , Net and Gross metering, Business model, tendering.
7. Power System and Protection: Basic concepts of electrical power generation and various equipment. Concepts of transmission lines, cables, Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per-unit quantities, Circuit breakers, Concept of protection.

Part II: Railways Electrical Engg.

1. General Services:

- a. Power Supply arrangement: Radial distribution system, Looped(Ring Main)
- b. distribution systems. Layout & Equipment at Distribution sub-station. Operation & Maintenance of sub-station, Various testing at sub-station, overhead & underground distribution, protective devices & their coordination. Construction, erection & commissioning of new sub-station and distribution lines. Basic features of PVC and
- c. XLPE cables. Cable rating and derating, Cable laying. Concept of average

demand, peak demand, load factor & electrical billing. Power factor improvement, Electrical & fire safety, Safety auditing of sub-station, concept of energy audit, Functions of Electrical Inspector to Government (EIG) in Railways. Power line crossing, Electricity Act-2003, CEA Regulations, SCADA and Substation automation. Earthing arrangement.

- d. Building Electrification: Types of various wiring methods, metering & safety measures. Wire, switchgears & fittings used for wiring, Energy efficient appliances, scale of fittings as per policy in various types of quarters, various types of Tariffs, commercial connection, concept of prepaid and postpaid metering, concept of smart meters. Safety coordination, Electrical accidents and prevention.
- e. Illumination & Lighting: Various parameters related to illumination, Different types of illumination sources, lighting methods, classification of lux levels at various types of stations, yard lighting & street lighting. Passenger amenities at Railway stations.
- f. Water supply: Types of water supply system, Pumping system, Classification of pumps, Comparison of various pumps, fluid theory, discharge calculations. Centrifugal pump, turbine pump, Submersible pumps, characteristic curve of pumps, efficiency. Cavitations & priming of pumps, necessity of multistage pumping, storage capacity and purification of water. Installation, maintenance & troubleshooting of pumps, Starter & drives of pumps, automation of pumps.
- g. Lift & Escalator: Working of Lift & Escalator, Installation of Lift and Escalator. Maintenance, various safety devices, control panels & Safety aspects.
- h. Air Conditioning & Refrigeration: Theory of air conditioning, refrigeration cycles, various types of refrigerants, window/split/package AC unit. Central air conditioning plant, VRF system, air cooling systems, planning for capacity and drives for refrigeration plant, Maintenance and troubleshooting.
- i. Energy Conservation: Need of conservation of energy, Various measures being taken by railways to conserve energy in the field of Electrical General Services. Necessity and implementation of Open Access in Indian Railways. Energy conservation Act.

2. Traction distribution:

- a. OHE: Basic design concepts of TRD system of conventional and 2x25kV system. Types of overhead equipment. Sectioning principles of OHE. Various parts of OHE. Foot Patrolling, current collection, Tower wagons, seasonal & cyclic checks, maintenance Schedule, Preventive maintenance Tools, failure investigation of OHE, earthing and bonding. Railway Electrification and process of construction. Power Blocks & Procedure to obtain it.
- b. PSI: Schematics of 1x25kV and 2x25kV traction substation with names/ratings of various equipment, protection scheme for TSS. Fixed and dynamic PF correction, Feeding stations, SSP & SPs, 132 kV transmission lines, PSI equipment.

Maintenance and failure investigation of PSI equipment.

- c. SCADA and Miscellaneous items: Operation and maintenance of remote control, traction power control organization, permit to work, emergency arrangements, coordination with operating and other departments. Liaison with supply authorities, maintenance and failure investigation of SCADA equipment.
- d. NDT techniques, Open Access, safety precautions for electrified sections, Latest development in TRD, MSG meetings. Instructions issued by Railway Board, RDSO's TI/MI, TCs, IRSOD & ACTM.

3. Train Lighting and AC Coaches:

Systems of Train Lighting and Air conditioning on coaches, Self Generating Coaches, ICF TL/AC Coach Generation system. Equipment, circuits and protection in ICF TL/AC coaches. Emergency feed extension in coaches. EOG and HOG systems in coaches - Hotel Load converter and Interlocking panel. Equipment, power circuits and protection systems in LHB TL/AC coaches, Power car and Pantry car. Air Conditioning in ICF/LHB coaches, Heat Load Calculation, Precooling, Pulldown and Dynodrive tests. Maintenance schedules of ICF and LHB coaches. Duties of ACCM/ACCA. Pre-cooling of AC Coaches. Fire causes and prevention measures in coaches. SMIs, Modification Sheets and Technical circulars issued by RDSO and instructions by Railway Board and RDSO.

4. Electric Locos:

Organizational structure and duties of officers & staff. Conventional AC & 3 phase locomotives on IR. Equipment in locomotives, their functioning / operations, maintenance / overhauling and testing parameters & maintenance schedules. Reliability & safety action plans. Traction Power Circuit, Auxiliary Circuit, Control Circuits and Pneumatic Circuits. Different types of braking arrangements. Locomotive maintenance schedules & various tests to be carried out. Working of Electric Loco Shed & Electric Loco Workshop. Safety items and safety checks involved in safe locomotive operation. Relevant paras of ACTM, Accident Manual, G&SR, IR SOD and Instructions issued by Railway Board, RDSO and CLW. Latest developments in the field of electric locomotives.

5. EMU and MEMU/Metros:

Concept of EMU/MEMU/Metro trains, various types of EMU/MEMU stock, Conventional & 3 phase EMUs & their salient features. Different types of brakes used in EMU/MEMU/Metros. Power circuits, auxiliary, control circuits. Mechanical components and its functions. Different electrical equipment and its functions. Inspection/Maintenance/Overhauling schedules of EMUs/MEMU/Metros. Safety precautions and fire prevention in EMU/MEMU/Metros. Train Control Management System(TCMS). Recent developments in EMU/MEMU/Metros.

6. Electric Loco and EMU Operation:

Organizational structure and duties of officers & staff. Crew management – Training, Monitoring & Counseling. Crew & loco links. HOER & Duty Rules. Loco utilization. SPAD (Signal Passing At Danger). Management of Crew lobby, running room, trips shed & TLC / Power controller office. Working of CMS & FOIS. Safe, punctual & efficient loco / EMU operation with online troubleshooting of locomotive / EMU failures. Relevant paras of ACTM, Accident Manual, G&SR, Instructions issued by Railway Board & RDSO. Latest developments in the field of electric locomotives / EMU operations.

7. Store Matters:

Procedure related to procurement of stock items and non-stock items, distribution and accountal of stores. Receipt and custody of stores. Sale of surplus stores. Inventory management, ABC Analysis. Procurement through GeM, IREPS. Schedule of powers under stores matters.

8. Tenders and Contracts:

Work proposals, Types of estimates & estimation stages. Type of tenders, earnest money, Performance guarantee, security deposit, technical & financial eligibility criteria, Merits and demerits of EPC tender. IRPMS. Procedure and stages of e-tendering through IREPS, General Condition of Contract (GCC) for works and service contracts, various provisions in Schedule of Power (SOP) under works matters, Basic principles of Project management, quality control in electrical works.