

दक्षिण पूर्व मध्य रेल्वे
South East Central Railway
कार्मिक विभाग, मंडल रेल प्रबंधक कार्यालय, बिलासपुर
Personnel Department, Divisional Railway Manager Office, Bilaspur

Addendum Office Order No: DPB/1281/2024 Dated 23-09-2024

(Ref: - This Office Notification No. 90/2024, Dt. 02-08-2024)

The following items are being incorporated in this office notification as cited above:

The 01 post of Instructor (Electrical Engineering) is to be filled up in Level-06 of 7th P.C. on the basis of Ex-cadre under MDDTI, Bilaspur for imparting training to the all the Artisan / Skilled Artisan staff of Electrical Department:

Further the following is added / inserted against Item No: 4,

4) Eligibility Criteria:

- (C) Sr. Tech.(MCM) & JE of the all wings of Electrical Department those who are working in Level-06 may submit their applications on or before 03-10-2024.
(D) Running staff are not entitled for the above post and the applications already submitted will not be entertained for this purpose.

Remaining terms and conditions as lay down in this office Notification No: 90/2024, Dated 02-08-2024 will be unchanged.

Encl-Application Proforma (Annexure 'A')
& Syllabus (Annexure 'B')

Digitally Signed by
R.shankaran
Date: 23.09.2024 13:19:45
(R.shankaran)
Asstt. Personnel Officer-III
for Sr. Div. Personnel Officer.

No: E/RSO/Sele./Elect./Instructor-I,

Date: 23.09.2024

Copy forwarded for kind information and necessary action to:-

- 1.CPO(Con)/BSP are request to if any eligible staffs are submitted application f the above post kindly check & verified those ien in BSP division before submitting in this office.
2. Sr.DEE(OP/TRS/TRD/GEN)/BSP, Ch.OS(Conf), DS-AISCTREA/BSP,DS-AIOBC/BSP, Notice Board
3. Available on web-site of <http://www.secr.indianrailways.in> Link as Home page. About us Division/Workshop-BSP-Personnel-Notification

PROFORMA**Annexure-'A'**

Application proforma for the 1 x-cadre post of Instructor (Electrical Engineering) in Pay Matrix Level-6 under Sr.DPO/MDDTI/BSP

S.No.	Particulars	Details					
1	Name						
2	Father's Name						
3	Date of Birth						
4	Age as on date of Notification i.e.02.08.2024	Years		Months		Days	
5	Date of initial appointment						
6	Initial appointment post & Pay Matrix Level	Post					
		Level					
7	Present post and Pay Matrix Level on regular basis/substantive grade	Post					
		Level					
8	Date of promotion to the present post on regular basis/substantive grade						
9	Working under/Department						
10	Station/office/Unit						
11	Division						
12	PF.No./NPS No.						
13	Community						
14	Educational/Technical qualification	Educational					
		Technical					
15	Professional background i.e. working experience						
16	Period of ex-cadre tenure, if any						
17	Remarks, if any						
18	Whatsapp No.						
19	Mobile No. & Email ID						

Place:.....

Date:.....

Signature of the employee

The above information is correct and verified from the available records. The employee is free from D&A/SPE/VIG cases and fulfills the conditions prescribed for the post.

नियंत्रक अधिकारी का हस्ताक्षर एवं पदनाम
Signature and designation of controlling officer

Syllabus for selection to the Ex- cadre post of Instructor (Electrical Engineering) PML-6at MDDTI/ BSP (Electrical-General Services)

Train lighting and air-conditioning

1. Principles of working. Maintenance schedule, POH and Schematic Circuit diagrams of train lighting equipment used in the simplified train lighting system. Details of wiring in coaches and associated safety device in case of fire in trains and the reasons thereof Problems of train lighting in day-to-day operation
2. Principle of working and schematic diagram of TL alternator with Flat as well as V belts and automatic voltage regulators, Lead and batteries, their characteristic on charge and discharge care and maintenance of batteries, battery charging plats, Sealed maintenance free batteries
3. Schematic arrangement for the refrigeration cycle of A. C. coaches and maintenance schedules.
4. AC coaches with RMPUs and under sling equipment's & schematic diagram.
5. Board out lines of refrigeration and air-condition equipment used for air-conditioning of buildings covering window models package type plants, split type air-conditioners and central plants, planning installation and maintenance of air-condition equipment refrigerators, water coolers

Energy conservation in General Services

1. Energy conservation measures, including non-conventional sources, power factor improvement by use of synchronous motors and capacitor banks

Electrical lighting of buildings, yards and water supply arrangement

1. Systems of wiring layouts, regulations governing the electrical equipment of buildings, contract specifications testing of installations, lighting of yards by point lights, flood lights etc, Standard of illumination for various applications and different form of light fittings suitable for special purposes.
2. Principles of working of various types of pumps in use on the Railways- selection of pumps and pumping installations and maintenance thereof along with their specifications. Assessment of water supply requirements in various Railway installations in terms of way and work manual.

Power House, Sub-stations, HT & LT distribution systems

1. Specification and layout of diesel generator, Principles of working of Diesel Engine, alternator and maintenance thereof, Specific fuel consumption, synchronization and parallel operation.
2. Sub-Station layout, specifications etc of transformers, switchgear, protective equipment, metering equipment, erection and testing of relays, testing of transformer oil distilled water and earth resistance, Parallel operation of transformers, Maintenance & operation of sub stations.



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3. Laying of underground cables cable jointing location of faults in cables and equipment used for the fault finding, repairs of faulty cables, testing
4. Earthing arrangements, Neutral earthing, testing earth screen

Rules, Regulations etc for General Services

1. Principle of working safety, maintenance & operation lifts Types of motors, ratings temperature rise, types of control & starters protective devices and safety features.
2. Indian Electricity Rules, 1956 and Indian Electricity Act 2003 as applicable to Railway installations, safety precautions to be taken for electrical installations.
3. Duties and qualifications for the electrical inspector in terms of Indian Electricity Rules, Rules for inspection of electrical installations by the Electrical inspector
4. Broad details of AC, Traction, Manual applicable to general services Safety precautions near 25 KV AC OHE, Modification to LT lines consequent of introduction of 25 KV AC traction
5. Rules governing transmission line crossing and underground cables across the Railway tracks
6. Electricity tariffs charged by the various Boards and optimization of electricity bill and power factor
7. Board principles and terms and condition of power supply agreement with the supply Authorities for electrical general services
8. Procedure to be followed for EIG sanction
9. Preparation of estimates for minor and major works detailed and working estimates etc layout plans and contract specifications, drawing office procedures.
10. Difference between capital and other stores and method of recoupments.

LHB Coaches

1. 1) End on Generation (EOG) system, Head on Generation (HOG) system, LHB Type EOG/HOG Coaches
2. 2) Classification & codes of different LHB Coaches over Indian Railways
3. 3) Electrical features of LHB Coaches, Step down Transformers, regulated cum Emergency Battery Charger, Battery, Battery Fuse Box, Switch Board Cabinets, Water Raising apparatus, Disconnecting and Earthing Device, Earthing Shunt, Mounting arrangements, Different types of Contactors & Relays, Measuring & Monitoring Relays.
4. 4) Air- Conditioning, RMPUs, Condenser Unit in RMPU, Evaporator unit in RMPU, Heating Unit in RMPU, Humidity sensors, NTC type temperature sensor, HP/LP Cut out (Cartridge type), Over Heat Protectors (Bimetallic type thermal switch) Microprocessor based Controller for RMPU & Different type of Sensors
5. 5) LSLRD Coaches, Power Cars, Pantry Cars & Pantry Equipments
6. 6) Power supply Flow Chart from Main feeding supply to Transformer Outgoing.
7. 7) REBC power supply Circuit diagram, 110 V Power supply Block Diagram, AC Control Power Supply Circuit Diagram

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Syllabus for the selection to the Ex-cadre post of Instructor, Electrical (OP)
PML-06 at MDDTI/Bsp

Knowledge of Control/Power circuit of Conventional locos, 3 phase locos, WAG12 locos
 EMU/MEMU (conv & 3 phases) and T-18

Knowledge of fault codes and action to be taken in 3 phase locos.

Isolation of auxiliary convertor/traction convertor in 3phase locos.

3phase MU operation procedure.

Stabling of EMU/MEMU rakes.

Troubleshooting of conventional and 3phase EMU/MEMUs.

Control / Power circuits of EMU/MEMU rakes.

Securing /towing dead of 3 phase locos.

Examination/Energisation/Operation of WAG-12 locos, Operation and basic trouble shooting
 knowledge of Vande Bharat (T-18) rakes.

BASICS OF ELECTRICITY

Knowledge of fundamentals of electricity voltage-

Intensity - Resistance - Measuring units - Meters.

Ohms Law - Calculation of V, I, R in the circuit

Power -Energy -Watt -Electrical unit.

Electrical symbols- Application on AC Loco diagrams

Electrical connections -characteristics.

Bonding-HOBA-purpose on AC locos.

Short-circuit - ill effects-precautions on AC locos.

TBA-Purpose on AC Loco.

Types of Transformers-purpose & cooling arrangements.

Rectifiers -purpose -cooling arrangements.

CONTROL CIRCUITS

Knowledge of AC Loco control circuits.

Purpose of batteries-Isolation procedure. Fuses

- Renewal - Operation of HOBA,

Panto, DJ, Tap changer and other control circuits.

MECHANICAL CIRCUITS

Knowledge of Pneumatic and vacuum circuits,

Equipments of the circuits and their purpose.

Cut out cock and drain cock at their purpose and location.

A9 and SA9 working and purpose, C3W valve purpose.

VA IB control valve, MU2B, VA IB release valve -purpose.

Weight distribution of AC Loco - Truck examination.

Surya
 JE/OP/BSP

POWER SUPPLY SYSTEMS

Basic knowledge of OHE power supply arrangements and equipments at Traction Sub-station, switching stations. (Sectioning & paralleling posts, sub- sectioning posts).

Remote Control and communication facilities in Electrified section.

Basic knowledge on OHE arrangements and equipments employed, special warning signals employed in electrified section. Overlap type Neutral section. Section insulator type Neutral section, PTEE type Neutral section. Working of traction Power Control - Power Blocks and permit to work. Protection measure for power blocks, Safety precaution in Electrified section. Movement of O.D.C. in Electrified section. Stagger of OHE. ATD, Cantilever assembly parts. Knowledge of AC Loco feeding circuit, its parts and purpose of each equipment.

Field weakening arrangements.

Traction motors on AC Locos –rectification of AC to DC.

Combination of Traction motors – current ratings.

Reversers– purpose of reversers.

Isolation of defective Traction Motors –Procedure.

Earth fault relay QOP – Functioning – Isolation.

Knowledge of Aux power circuit equipments.

Direct current motors purpose–Isolating procedure

Remote control motors purpose – Isolation.

ROLLING STOCK ORGANIZATION AND WORKS CARRIED OUT IN DIFFERENT SECTIONS

Organization set up for operation of Electric Rolling Stock and duties of running Supervisors.

TROUBLESHOOTING

Knowledge of defects on AC locos procedure of troubleshooting.

Method of identifying the trouble.

Reason and remedy of each trouble.

MONITORING OF ACLOCOS AND DRIVERS

Capability to monitor the locos and counseling of drivers and assistant driver on running trains. Knowledge to create problem on AC Locos to check the troubleshooting knowledge of drivers. Able to educate/operating to trains under different conditions.

G & SR AND SAFETY RULES

Knowledge of general and subsidiary rules to work AC loco trains and educating the promotes batches. Knowledge of safe working methods, working of trains during abnormal conditions. Fire fighting procedures – Operation of fire extinguishers including all accident & operating manual chapters. Duties of driver in case of accident and disaster.

Signature
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VOCABULARY AND ABILITIES

Fluency to speak in English, using appropriate words to express the correct meaning.
Knowledge of other languages like Telugu, Hindi to educate the running staff of less literacy.
Knowledge to draw electrical and mechanical diagrams on black board's preparation of transportant circuits.
Operation knowledge of DHP, TV, VCR and knowledge of vice- grapy to film the video tapes on AC locos.

CHARACTER

Aptitude to teach the drivers and assistant drivers maintaining of self discipline, and good habits. Cool temperament and capability of handle any situation. Ability of control all sorts of trainees also with cool and gentle way. Ability of judging the trainers' behavior and keeping a good watch out.

Gentle and soft speaking attitude suitable way of approach to officers

GENERAL ACTIVITIES

Knowledge to organize the seminars and meetings. Assembling of trainees for seminars.
Capable to deliver speech during meetings/seminars, to educate safe methods of train working
In different abnormal condition.

PUNCTUALITY

Features the working time table, hauling capacity of different locos and load table, different losses counted in coaching services various allowances.

ESTABLISHMENT

Classification as per HOER, duty hours, different allowances, rest of running staff, PME rules ,penalties in D&A rules, leave rules.

FINANACE RULES

Railway budget, rules of allocation, work program, financial control over store expenditure, general finance rule. delegation of power. GeM, classification of railway revenue and any topic felt necessary from time to time.

NOTE:*10%of the total marks on the question paper shall be allotted to official language and policy. (Authority: Rly.BoardLr.No.E (NG) I-94/PM1/16,dt16.11.1994 (S.C.No.107/94).

Sujeet
1 JE/OP/289

एमडीडीटीआई/बीएसपी में इलेक्ट्रिकल (ओपी) /टीआरडी/जनरल/टीआरएस) विभाग में प्रशिक्षक (इलेक्ट्रिकल इंजीनियरिंग) पीएमएल - 6 के एक्स-कैडर पद पर चयन का पाठ्यक्रम।

Syllabus of selection to the Ex-Cadre post of Instructor (Electrical Engineering) PML-6 at MDDTI/BSP in Electrical (OP)/TRD/Gen/TRS) Deptt.

A. तकनीकी :-विद्युत (क.च .स्टॉक) , Technical(Elect-TRS)

1. चल स्टॉक का अनुरक्षण – सामान्य, Maintenance of rolling stock general.
 - शेड संगठन , Shed organization structure
 - वरिष्ठ अनुभाग इंजिनियर (अनुरक्षण) की ड्यूटियां , Duties of Sr. Section Engineer (Maintenance)
 - वरिष्ठ अनुभाग इंजिनियर / कनिष्ठ इंजिनियर (योजना एवं प्रगति कार्यालय) का कर्तव्य ,Duties of Sr. Section Engineer/Junior Engineer (Planning and progress office)
 - अनुभाग पर्यवेक्षक की ड्यूटियां, Duties of Section Supervisors
 - पुलिंग पॉइंट पर्यवेक्षक की ड्यूटियां, Duties of pooling point Supervisors.
 - शेड में कार्यभार का वितरण, Distribution of workload in the Shed.
 - तकनीकी अनुभाग का कार्य का विवरण, Duties of Technical section.
 - लोको शेड एवं पुलिंग पॉइंट में रखे जाने वाले रिकॉर्ड एवं रजिस्टर, Records and register to be maintained in loco.
2. विद्युत इंजनों का अनुरक्षण और ओवेरहॉल कार्यक्रम, Maintenance & overhaul schedule of Electric locomotives.
 - रेल इंजनों का अनुरक्षण और ओवेरहॉल कार्यक्रम, Maintenance & overhaul schedule of Electro locomotive.
 - विद्युत लोको का निर्धारित निरीक्षण, Schedule inspection of Electric Locomotives
3. विद्युत् लोकोमोटिव /थ्री फेज/ के कार्य का सिद्धांत, Electric Locomotive Three phase working principle
4. विद्युत् लोकोमोटिव का ऑपरेशन/ रखरखाव की सुरक्षा सुविधाएँ, Safety features of operation/maintenance of electric locomotive,

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5. विद्युत् लोकोमोटिव/श्री फेज में प्रयुक्त उपकरणों की कार्यविधि ओवरहालिंग, Working Principle of different type of Equipment's overhauling procedure for three phase locomotives.
6. रीजनेटिंग ब्रेकिंग के फायदे एवं नुक्सान, Advantages & disadvantages of over Regenerative braking.
7. श्री फेज लोकोमोटिव की मुख्य विशेषताएं एवं डीसी ट्रैक्शन मोटर्स पर एसी ट्रैक्शन मोटर का लाभ, Main features of Three phase locomotives and advantage of AC traction motor over DC traction motors
8. विद्युत् लोकोमोटिव /श्री फेज/ में इस्तेमाल किये गए सुरक्षा उपकरणों का विवरण एवं कार्य प्रणाली, Details and working procedure of Safety equipment used in electric locomotive/three phase.
9. विद्युत् लोकोमोटिव/ श्री फेज में गर्मी/मानसून/शीतकालीन सावधानी की तैयारियां, Preparedness of Summer Monsoon/Winter precaution in Electric Locomotive/Three Phase
10. विद्युत् लोकोमोटिव/ श्री फेज में समस्याओं का निवारण, Troubleshooting of Electric Locomotives /Three phase.
11. श्री फेज लोकोमोटिव का तकनीकी पैरामीटर, Technical parameters of three phase locomotives.
12. भारतीय रेलवे पर चलने वाली लोकल की सामान्य एवं तकनीकी पैरामीटर एवं उपकरण का विवरण, General and technical parameters and equipment details of locos running over Indian Railway.

व. मंडल विद्युत् इंजीनियर (क.च.स्टा.)
विद्युत् लोको शेड, बिलासपुर

१. मंडल विद्युत् इंजीनियर (क.च.स्टा.)
Sr. Divit. Elect. Engineer (TRS)
द. पू. मध्य रेलवे, बिलासपुर
S. E. C. Railway, Bilaspur

TRD

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DEPARTMENT : ELECTRICAL (TRD)

Syllabus for Promotional Course from Artisans to JEE

Sl. No.	Module Description
01	Introduction to working & Railway Organization and Electrical department set-up, function of various streams.
02	General Electrical Technology, Basic knowledge on – Transformers, Motors, Alternators, Generators. Polyphase circuits, Measuring instruments, Electrical material like (Insulating, conductors) including Basic electronics etc.
03	Precaution of safety on electrified section related to, earthing of equipments, earth Rod, Bonds, fire fighting & First Aid etc.
04	Maintenance of TRD installation and Tower car/ Tower wagon.
05	Material management (Store procurement), up-keep. Records, inventory management, application of UDM.
06	Establishment Rules, (DAR, Leave/Pass Rules).
07	Financial management (Railway Accounting and financial procedure).
08	Energy Managent, HT energy bill and energy Conservation.
09	Reading of sectioning drawing, circuit diagram, LOP, SED and application of E-DAS.
10	Failure investigation/case studies on OHE/PSI//SCADA installation and Tower wagon/Tower car.
11	Application of TDMS,IMMS, IRPSM & IREPS.
12	Disaster management.
13	राजनाषा एवं सामान्य ज्ञान ।

म.वि.सं. (कर्मण) बिलासपुर
DEE (TRD) BSP.