

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

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

Date: 02.08.2024

NOTIFICATION NO. 90/2024

It is proposed to fill up 01 (one) vacancy of Instructor (Electrical Engineering) in Pay Matrix Level-6 against Ex-cadre post under MDDTI/Bilaspur, details of which are appended below:-

1	Name of the post & Pay Matrix Level	Vacancy
	Instructor (Electrical Engineering), & P. M. Level-6	01
2	Closing date	16.08.2024
3	Mode of selection	(A) In terms of RBE No.79/2019 (Estt. Rule No.141/2019), the details are appended below:- (i) Written Test (75 marks) and Classroom Lecture Trial (25 marks). Selection Committee constitution to be in terms of letter No.E (MPP)/2018/3/5 dated 19.06.2018 (RBE No.93/2018) (Estt.Rule No.194/2018).Principal/Head of the Training Institute shall be associated in class room trial. Thus, the above selection process will evaluate the knowledge as well as communication skill of the candidates as both are required for the post of Instructors. (ii) Maximum Marks-100, Qualifying Marks- 60% . (B) In terms of RBE No.39/2020 (Estt.Rule No.72/2020), all those candidates who score not less than 60% marks in the written test (professional ability) will be called for class room lecture trial, and the final panel will be drawn in the order of merit from amongst those who secure a minimum of 60% marks in the professional ability and 60% marks in the aggregate. (C) The written examination will be conducted as per RBE No.-196/2018 (Estt.Rule No. 359/2018), RBE No.-97/2019 (Estt.Rule No.164/2019), PCPO/SECR's office letter No.P-HQ/RUL/105/2 (Vol.II) dated 02.02.2023 & 20.04.2023 and as per extant rule circulated from time to time (The question paper will henceforth be 100% Objective type) (D)In terms of RBE No.194/2019 (Estt.Rule No.315/2019), there will be negative marking @ 1/3 mark for a wrong answer.
4	Eligibility condition	(A)In terms of RBE No.79/2019 (Estt. Rule No.141/2019) :- (i) Staff in same/allied department in identical Grade Pay in Level-6(GP-4200/-). (B) In terms of RBE No.104/2023 (Estt.Rule No. 178/2023):- (i) Upper age limit on the date of notification may be 58 years.
5	Terms & conditions	(i)The candidates should have completed at least two years service in railways on the date of notification. (ii)The staff in same/allied working and having lien in the Electrical department(TRS/OP/TRD/GEN) can only apply for the post of Instructor (Electrical Engineering). (iii)Ministerial staffs are not eligible to apply for the post of Instructor (Electrical). (iv)The staff working in Pay Matrix Level-6 (only regular and not against MACP granted) will be eligible to apply against the vacancy of

	Instructor (Electrical Engineering). (v) The staff working in Level-6 are if selected, they will be considered for being posted only for Level-6 (GP-4200), in terms of RBE No. 06/2007 (Estt. Rule No.36/2007) (vi) In terms of RBE No.04/2021 (Estt. Rule No.15/2021) & RBE No.104/2023 (Estt. Rule No.178/2023), the tenure of the Instructor will be five (05) years in the MDDTL. (vii) In terms of RBE No. 145/2017 (Estt. Rule No. 196/2017), the staff so selected for the post of Instructor for Training center will be entitled for the teaching allowance at the rate of 12% of Basic Pay. (viii) In terms of RBE No.104/2023 (Estt. Rule No.178/2023), cooling off period between two tenures Should be at least one year. (ix) The staffs who are already working in the ex-cadre post and who have worked in the ex-cadre post will not be allowed before mandatory cooling off period of 03 years in their parent cadre. (x) The paper lien of the staff so selected will be maintained in their parent seniority group/unit and they will be sent back to their former post as and when the tenure is completed or repatriated early by the administration. (xi) Since, the Instructors are granted Teaching allowance, hence, they will not be entitled to special pay/deputation (duty) allowance. (xii) Sr.DEE(OP/TRD/TRS/RS&G) are requested to give wide publicity among the staff working under their control. (xiii) The application form, as per attached Annexure-'A'. The controlling officer has to forward all the application in one bunch to this office on or before 16.08.2024. The HQ/Construction staff (lien maintained in BSP Div.) may forward their application, through proper channel of their Controlling Officer to Personnel department/BSP Division. Application received after the last date will summarily be rejected without assigning any reason. The applications received beyond the last date would not be entertained and rejected invariably by the controlling supervisor/officer and same will not be considered. The application directly received in this office will not be entertained and no correspondence will be made in this regard.
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Encl-Application Proforma (Annexure 'A')
& Syllabus (Annexure 'B') - 08 Pages

Digitally Signed by
R.shankaran
Date: 02-08-2024 18:28:47
Reason: Approved

(R.Shankaran)
Asstt. Personnel Officer-III
For Div. Personnel Officer

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 len in BSP division before submitting in this office.
2. Sr.DEE(OP/TRS/TRD/GEN)/BSP, Ch.OS(Conf), DC-SECRMC/BSP, 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
4. Syllabus 'is Consolidated for all concerned



PROFORMA

Application proforma for the I 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.



Gen

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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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OP

(3)

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 converter/traction converter 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.

Singh
 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
1/11/2018

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 इंजनो का अनुरक्षण और ओवेरहॉल कार्यक्रम, Maintenance & overhaul schedule of Electric locomotives.
 - रेल इंजनो 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,

TRC

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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.