



South Central Railway

DRM's Office,
Personnel Branch,
Vijayawada -520001.
Dated: 04/12/2023.

No.SCR/P-BZA/209/2-TRS/JE/LDCE/ELS/Vol.III

NOTIFICATION

Sub:- Formation of panel for filling up the post of JE(TRS) in Level -6 of VII CPC pay matrix against 25% LDCE quota in Electrical (TRS)Department – BZA division.

It is proposed to form a panel for filling up of one vacancy of 'Junior Engineer/TRS in Level-6 against 25% Limited Departmental Competitive Exam (LDCE) quota in Electrical (TRS) organization of Vijayawada division. The communal break-up of vacancies is as detailed below:

Category	SC	ST	UR	Total
JE(TRS)	Nil	01	Nil	01

02. Eligibility and Service conditions of staff:

All serving employees having the qualification of ITI/Act Apprenticeship pass in the relevant trade or 10+2 in Science stream with minimum three years of service in skilled grades i.e., Technician Gr.III of Electrical(TRS) organization of ELS/BZA division and above.

In terms of Rly.,Bd's Lr.No.E(NG)I/99/PM7/17 dated 25.08.2003, communicated by CPO/SC's S.C.No.172/2003, the qualification of ITI/Act Apprenticeship should be in trades relevant for eventual absorption in the category for which the selection is conducted i.e., trades relevant to the post of JE(TRS) in Electrical department.

In terms of Rly.,Bd's Lr.No.E (NG)I/99/PM7/17 dated 28.07.2003, communicated by CPO/SC's S.C.No.157/2003, if the employee otherwise eligible and possessing the qualifications of Degree or Diploma in the relevant branch of Engineering are also be eligible to volunteer to appear in the selection for induction as Intermediate Apprentices along with those with the qualification of ITI/Act Apprenticeship or 10+2(Science stream)

The volunteering staff should be below the age of 52 years(CPO/SC's S.C.No.90/2010 & 92/2011).

In terms of Rly.,Bd's Lr.No.E(NG)I/2005/PM1/52 dated 22.08.2006, communi-cated by CPO/SC's S.C.No.131/2006, the cut-off date for determining the eligibility of the staff should be the date of issue of notification. As such, the volunteering employees should stand fulfill the service conditions of age and educational qualifications etc., as on the date of notification i.e., **as on 04 December 2023.**

Medical Classification Aye-Three (A3) and must have satisfactory service record with respect to application of work attendance and general conduct.

03. Mode of Selection :

In terms of Rly.,Bd's Lr.No.E(NG)I/2000/PN1/41 dt.20.8.2003, communicated by CPO/SC's S.C.No.144/2003, the positive act of selection to assess the professional ability of the candidate shall consist of written test only. The candidate has to obtain a minimum of 60% marks in professional ability, i.e., in written examination, for being considered for further selection process of perusal of service record. The post of 'Junior Engineer' being classified as "**safety category post**", there is no relaxation in qualifying marks to employees belonging to the category of ST and hence they are also required to secure 60% marks in the written examination.


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The selection will be basis of written examination and assessment of record of service. The written examination will consist of one paper in professional ability as per syllabus enclosed as Annexure-B

The Selection will be finalized entirely on 'MERIT' basis as per the railway Board's letter vide RBE No. 113/2009(S.C.No.95/2009).

04. Syllabus :

The syllabus prescribed for selection to the post of Junior Engineer against 25% LDCE quota is enclosed as Annexure-B

05. Procedure for written examination :

In terms of Railway Board's Lr. No.E (NG) I-2018/PM1/4, dt.14.12.2018 communication by PCPO/SC's S.C.No.212/2018, the question paper will be 100% objective type and all the questions will be of multiple choice only.

In terms of CPO/SC's S.C.No.47/96, questions on official language will form part of the professional ability for 10% of total marks. The questions on official language policy are compulsory but there shall not be any compulsion on the part of the candidate to answer such questions.

06. Question Bank :

In terms of Rly.,Bd's Lr.No.E(NG)I-2006/PM1/34 dated 06.11.2006, CPO/SC's S.C.No.196/2006, updated Question banks covering the complete syllabus will be provided to the staff concerned or the same can be downloaded from the official website of www.scr.indianrailways.gov.in. It is further advised that there will not be any mandatory limit of questions from the question banks. The controlling officer/ supervisor has to ensure that the question bank is circulated to all the eligible staff and postponement of selection due to non-circulation of question banks will be viewed seriously.

The answers to the objective questions should be updated with latest instructions/amendments/modifications issued by the Railway Board/H.Qrs.,office.

07. Date of Examination :

The date, venue and time of examination will be intimated separately. However, it is to be advised to the volunteering staff that there will be no supplementary examination to the absentees in the main examination since the selection is by calling volunteers.

08. Procedure for drawal of panel :

In terms of Rly.,Bd's Lr.No.E(NG)I-2008/PM7/4 dated 19.06.2009, CPO/SC's S.C.No.95/2009, the final panel shall be drawn in the order of merit based on the aggregate marks of 'professional ability' and 'record of service' since the zone of consideration is not confined to three times the number of staff to be empanelled and candidates being called from different categories from different department/within the same department, as the case may be. However, a candidate must secure a minimum of 60% marks in the aggregate for being placed on the panel and final empanelment is subject to the availability of vacancies.

09. Additional information for guidance to the staff:

The apportionment of marks under the head of 'professional ability' and 'record of service' is 85 and 15 respectively to assess the suitability of the candidates for considering for empanelment to the post of Junior Engineer.

The assessment under 'professional ability' will be based on the marks secured by the individual employee in the written examination held as part of selection.


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The apportionment of 15 marks under the head of 'record of service' will be assessed as per the entries available in the service register with respect to the educational qualifications, awards and punishments.

The marks will be added for each individual cash award/merit certificate issued during the Railway Week Celebrations preceding three years at divisional level, zonal level and at Rly., Board level i.e., at the level of DRM/HOD/PHOD/GM/Railway Board. Similarly, marks will be deducted for each minor/major penalty imposed preceding three years.

10. Notifying to the staff:

In terms of Rly., Bd's Lr.No.E(NG)I-72/PM1/166 dated 26.06.1972, communicated by CPO/SC's S.C.No. 213/72, the Senior Subordinate/ Supervisor concerned has to furnish a certificate that 'the eligible candidates were duly notified of the holding of the test and asked to submit their applications duly giving their willingness' and forward the same to Sr.DPO/BZA. It should be the personal responsibility of the Senior Subordinate/Supervisor to complete the formality in this respect. It is further advised that any other communication received in respect of the selection should invariably be intimated to all the eligible employees. In case of non receipt of any communication the same may be obtained from the Personnel department or from the controlling officer. Any laxity in this regard will be viewed seriously.

The employees, who are placed on select list for promotion to the post of Jr.Engineer/TRS, have to pass in prescribed medical examination of Aye -three as per para 517of IRMM.

Wide publicity of this notification should be given to all the eligible staff under your control including those who are on deputation, leave/sick, training etc, A copy of Notification may be displayed on notice board.

11. Last date for submission of Applications:

The willing and eligible volunteer has to submit their applications in prescribed proforma to their **controlling officer on or before 30.12.2023**. The controlling officer has to forward all he applications in one bunch **to Sr.DPO/BZA together with DAR/SPE/Vig., clearance on or before 05.01.2024**. The candidate should necessarily fill all the relevant columns and strike out the inapplicable columns indicating as 'Not Applicable'.

Encl: 01. Application Proforma (Annexure-'A')

02. Syllabus (Annexure-'B')


(K.SRINIVASA RAO)
APO/M&EL
For.Sr.DPO/BZA

Copy to: PCPO/SC, PCEE/SC, SDGM/Vig./SC,

Copy to: Sr.DEE/TRS/ELS/BZA, Sr.DEE/TRS/OP/BZA,

Copy to: Ch.OS/IT Cell & Conf.Section

Copy to: All Supervisory officials of Electrical (TRS) department of BZA division;

Copy to: DSs of SCRES, SCRMU, AI SC/ST Rly, Employees Assn., & OBC Employees Assn.,

PROFORMA APPLICATION FOR THE POST OF 'Junior Engineer (TRS)' IN ELECTRICAL DEPARTMENT IN LEVEL - 6 AGAINST 25% LDCE QUOTA.

Sl No	Description	Details
01	Name of the employee(in capital letters)	
02	Designation/Station/Unit	
03	Present Pay Band	
04	Provident Fund A/c No.	
05	Date of entry into the present grade	
a)	Regular	
b)	Adhoc	
06	Date of Birth (words & figures)	
07	Age as on date of issue of notification	
08	Date of Appointment	
a)	Date of entry into Tech.Gr.III(Regular)	
b)	Date of entry into Tech.Gr.II	
c)	Date of entry into Tech.Gr.I	
d)	Date of entry into Sr.Tech.,	
09	Mode of appointment viz., RRB/CG/ Sports/Scouts/Cultural etc.,	
10	Whether belongs to ST(copy to be enclosed)	
11	Educational/Technical qualifications (copies to be enclosed)	

Declaration : I hereby declared that the particulars furnished above are true, complete and correct to the best of my knowledge and belief. I understand that if at any stage it is found that the information furnished is false or incorrect or I do not satisfy/fulfill the eligibility criteria, my promotion is liable to be cancelled besides disciplinary action as per rules. I have read the contents of the notification and agree to abide by the Rules, regulations and procedure prescribed for promotion to the post of JE/Tr.D in Elect.,dept

Place :

Date :

Signature of the Employee

The above particulars have been verified and found correct. Recent passport size photograph of the employee is pasted duly attested

Place :

Date :

Signature of the supervisory official
with Designation/Seal & Date

[Handwritten Signature]
4/11/14

PART-A

A) Basics of electricity

- 1) Study of Electricity, Ohms Law, Magnetism, Electromagnetic induction, Flemings R.H. Rule, L.H. Rule, Lenz's Law, self inductance, Mutual inductance, Study of AC circuits i.e., RL, RC, RLC Circuits, Series Resonance, Parallel resonance.
- 2) Study of power factor and the improvement methods demand and economy in installation of electrical energy.
- 3) Measurements of Resistance, current voltage, power study of various types of meters and equipments used, Megger, diode tester, ammeter, Voltmeter etc., uses of shunts, multipliers.

B) DC Generators:

Working principles of D.C. Generators, DC shunt generators, DC series generators and DC compound generators.

C) DC Motors:

Study of DC motors and their performance characteristics and Speed characteristics. DC series motor as traction motor and its suitability for traction applications.

D) Transformers:

Study of Transformers and concept of Mutual induction. Step down, Step Up transformers, Auto transformers, Current transformers and Potential Transformers. Applications of Transformers. Their role in Electricity.

E) Induction Motors:

- 1) Study of 3phase induction motors and their performance characteristics. Their applications, Torque speed characteristics. VFD drives and their application to Induction Motors.
- 2) Study of 3 phase induction motors principle, maintenance and overhauling, study of Induction generator, working principles, study of Arno, Aux, machines of A.C. Loco

F) Transmission and distribution networks:

Study of transmission lines and distribution lines and under-ground cables, study of erecting the lines determination of conductor size and re-cabling of locomotives.

G) Importance of Earthing and Earth testing procedure:

Why earthing is to be done, PIPE earthing, Plate earthing, Maintenance free earthing, Study of Earth testing procedure, insulation test for various equipments and testing of insulators.

H) Basics of Electronics, Diodes, Transistors, Amplifiers, Oscillators, GTOs, IGBTs and their properties.

I) MCBs, Contactors, Fuses, selection of rating of MCBs, contactor, fuses based on current rating.

J) Electrical Safety and ACTS and Rules.

1. Electricity act and safe rules and Shock treatment, first aid and use of Fire Extinguishers.

K) ELECTRICAL TRD EQUIPMENT and Its BASIC Knowledge:

Electrical OHE and Its arrangement, Traction Substation Layout and its Equipment.

A) Conventional Locomotives (WAG-5/7, WAM-4, WAP-4)

1. DC Series Motors as Traction Motors: Study of Characteristics, Armature Reaction and Commutation Improvements for commutation and suitability of D.C. Series Motor for traction duty. Study of Traction Motor used in A.C. Locomotives WAP4 & WAG5/7 Maintenance, repairs, overhaul of Traction motors of Conventional Locomotives.
2. Study of Conventional Locomotive circuits i.e., Power circuits and control circuits, parameters of A.C. Circuits, Simple calculations, study of power supply arrangements of A.C. traction (Conventional Locomotives).
3. Study of current collection in A.C. Locomotive, study of roof equipments of A.C. Loco.
4. Study of Transformers: principle, overhaul and maintenance of Transformers, Auto-Transformers, conditions for parallel operation of transformer, study of transformer used in A.C. Loco WAP4 & WAG5/7; Maintenance and overhauling tests to be conducted on the transformer, study of tap changer, operation method for voltage control, Testing of transformer.
5. Study of fuse protectors, switches and isolators, construction and working details of circuit breakers of A.C. Conventional Locos (DL).
6. Study of various types of contractors and relays, study of relays and contractors used in the A.C. Loco, Drum Contractors. Function of blow out coil and arc chutes.
7. Study of batteries, commissioning (initial charging) maintenance and reclamation and battery charging procedures.
8. Study rectification methods, filters, study of Silicon rectifier, smoothening reactor in the Loco study of semi-conductor devices, battery charger.
9. Safe working on the locomotive precautions to be taken, Fire preventive measures in the locomotive and study of fire fighting.
10. Study of circuit, analysis of WAP4 & WAG5/7 Locomotive i.e., study of circuits, cabling Index and other drawings.
11. Study of new equipments in Loco such as MPCS, SIV, VCD and WMUCS.
12. Study of DJ control Circuit. Study of various branches and trouble shooting of various branches in DJ control circuit of Locos both with SIV fitted Locos and Arno fitted Locos.
13. Study of WAP-4 & WAG5/7 Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity etc.
14. Study of Sander gear and Brake rigging, various types of brake systems (Cubicle brake system, Tri-plate type in Conventional Locos (WAG-7).
15. Study of Pneumatic circuitry of WAP-4 & WAG5/7, Study of various Pneumatic Valves, braking system (E-System).
16. Study of maintenance schedules for various equipment in the Conventional Locomotive, their periodicity for schedules.
17. Different lubricants used in WAG 5/7 & WAP 4 locomotives
18. Maintenance of Records in PPO section.
19. Study of Conventional Locomotive, testing, engine fitness and troubleshooting procedure.
20. RDSO Modification and SMIs implementation and maintenance of various records of Conventional Locomotives.
21. Remaining information related to Conventional locomotives (WAP4, WAG5/7)

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3-Phase Locomotives(WAP-7, WAG-9)

1. Study of Electronic devices i.e., IGBT and GTOs as control switches in power circuitry and auxiliary circuitry of 3phase Locomotives.
2. 3phase induction Motors as Traction Motors: Study of Characteristics, use of 3phase induction motors for traction duty. Study of Traction Motor used in A.C. Locomotives WAP7 & WAG-9 Maintenance, repairs, overhaul of Traction motors of 3Phase Locomotives (WAG-9, WAP-7).
3. Study of 3Phase Locomotive circuits i.e., Power circuits and control circuits, parameters of A.C. Circuits, Simple calculations, study of power supply arrangements of A.C. traction(3phase Locomotives). IGBT as a control device in POWER circuits and Auxiliary converter circuits. Advantages of IGBT based Locos over GTO based Locos.
4. Study of current collection in 3Phase Locomotives, study of roof equipments of A.C. Loco.
5. Study of 3phase LocomotiveTransformers, overhaul and maintenance of Transformers, conditions for parallel operation of transformer, Maintenance and overhauling tests to be conducted on the transformer, testing of transformer.
6. Study of Auxiliary converter circuits (BUR circuits) and components.Auxiliary converters (BURs)power supply and load sharing between during normal condition and during isolation of one BUR.Study of fault messages and troubleshooting based on fault messages.
7. Study of Transformer cooling circuit and function of TFP MPH & their protections.
8. Study of SR coolant circulation and function of SRMPH& their protections.
9. Machine room layout of 3phase locomotives. Locations of various equipment in Machine room.
- 10.Study of various types of MCBs, contractors and relays, study of relays and contractors used in the 3phase Locomotives.
- 11.Study of batteries in 3phase locomotives, commissioning (initial charging), maintenance and reclamation and battery charging procedures.
- 12.Safe working on the 3phase locomotive; precautions to be taken, Fire preventive measures in the locomotive and study of fire fighting.
- 13.Study of circuits, analysis of faults in WAG-9 Locomotives i.e., study of circuits, cabling Index and other drawings.
- 14.Protective functions in three phase locomotive(ABB document 3EHP 541526), working of VCD, Failure mode operation, Inching mode operation, Constant speed control, Traction Interlock, SR Interlock and Indication of faults using BPFA & LSFL.
- 15.Study of WAG-9/9H Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity i.e., Springs and dampers etc.
- 16.Study of Sander gear and Brake rigging, various types of brake systems in 3phase Loco. Differences between TBU/PBU type brake rigging and conventional Brake rigging.
- 17.Different lubricants used in WAP 7/ WAG9 locomotives
- 18.Study of Pneumatic circuitry of WAG-9, Study of various Pneumatic Valves, braking systems. Study of E70 based and CCB based Brake systems.
- 19.Study of maintenance schedules for various equipment in the 3phase Locomotive, its periodicity. Important checks to be carried out during schedules.
- 20.Study of 3phase Locomotives, testing, engine fitness and troubleshooting procedure.

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21. RDSO Modification and SMLs implementation and maintenance of various records for 3phase Locomotives.
22. Study of new equipments in Loco such as CVVRS, Vacuum Toilet, VCD and DPWCS.

PART -C

1. Railway service conduct rules, Pass rules, D&A rules, Hours of employment regulations, payment of wages act, WC act.
2. Procurement of Stores- stocked items and non -stocked items, imprest stores, disposal of unserviceable stores, stock verification and accountal correspondence.
3. Rules and regulations about Official Language i.e., Hindi as Official Language. Knowledge on Hindi language.

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