

## SOUTH CENTRAL RAILWAY



Office of the  
Divisional. Railway Manager,  
Personnel Branch,  
4th Floor, Sanchalan Bhavan,  
Secunderabad - 500 071.

No.SCR/P-SC/210(a)/EL(TRS)/JE/ELS/LGD/PRQ

Date 18.07.2024

**JE/TRS (PRQ) Notification**

Sub: Formation of panel for filling up of the post of Junior Engineer/TRS in ELS/LGD with Level-6 of 7<sup>th</sup> CPC Pay Matrix, against **25% Promotional** quota of Electrical (TRS) Department on Secunderabad Division – Reg.

Ref: Sr.DEE/ELS/LGD's letter no. C/E.150/ELS/LGD/Selections dated :12.07.2024

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- 1.0 It is proposed to conduct a selection for formation of panel for promotion to the post of JE/TRS in ELS/LGD with Level-6 of 7<sup>th</sup> CPC Pay Matrix against 25% Promotional quota of Electrical (TRS) Department on SC Division. The details of vacancies are as under:

Category	Quota	Level (in 7 <sup>th</sup> CPC)	SC	ST	UR	Total
JE/TRS	25% PR Quota	Level-6	01	--	01	02

**2.0 Conditions of eligibility:**

- 2.1 Three times of senior most Sr.Tech of combined seniority (Elect. & Mech. wing )to the number of vacancies will be called for selection in terms of Para-215(e)of IREM Vol-I.
- 2.2 The following employees working in the immediate lower grade i.e. Sr.Tech/ELS/LGD are called for selection in the order of seniority and on the basis of willingness communicated vide Sr.DEE/ELS/LGD's letter under reference.

S.No	PF No.	Name (S/Sri/Smt)	Comm-unity	Present Design./ Station
01	24205524118	D. KHEEMA	ST	Sr.Tech/ELS/LGD
02	24203680228	M.RAMESH	UR	Sr.Tech/ELS/LGD
03	24211600123	P.NARASIMHA REDDY	UR	Sr.Tech/ELS/LGD
04	24211600457	S.GEETHA RANI	SC	Sr.Tech/ELS/LGD
05	242'03325192	M.RAMULU	SC	Sr.Tech/ELS/LGD
06	24211601711	K.NAGA RAJU	SC	Sr.Tech/ELS/LGD

- 2.3 The list of above employees is final. If one or more employees mentioned above give unwillingness for selection on a subsequent date, additional persons will NOT be called to compensate for him/ them in terms of Note-2 of Para-215(e)of IREM Vol-I.
- 2.4 The above employees may be notified about the notification and clear acknowledgement may be obtained. In case of any employees, who are on leave/sick list/on line, copy of notification may be sent to their home address.

**3.0 Pre-selection training:**

- 3.1 Sr.DEE/ELS/LGD shall arrange for pre-selection training to the 'SC' employees for a period of 3 to 4 weeks at the earliest ,which shall cover entire syllabus in terms of PCPO/SC's SC No.41/98 and PCPO/SC's SC No.245/2001.
- 3.2 In case any of 'SC' employee is unwilling to undergo pre-selection training ,a written declaration in this regard shall be obtained and sent to this office for record.
- 3.3 These instructions should be adhered to strictly in an effective manner so that the performance of the 'SC' employees may come up to the required standard.

**4.0 Syllabus:**

- 4.1 Syllabus for the written test is enclosed as Annexure 'A'.  
The Question paper will be provided in bilingual i.e., in English and Hindi.
- 4.2 There shall be questions on Official Language policy & Rules upto 10% of marks.  
However, it is not mandatory to attend the same.

**5.0 Sample Question Bank:**

- 5.1 In terms of Railway Board's letter No.E(NG)I-2006/PM1/34,dated 06.11.2006, (PCPO/SCR's SC No.196/2006) .Sample Question Bank will be uploaded on official website of SC Division- [www.scr.indianrailways.gov.in](http://www.scr.indianrailways.gov.in). the same may be downloaded.
- 5.2 Sample Question bank is only indicative in nature but not exhaustive. The examinees are advised to update their knowledge keeping in accordance with the change of technology and job requirement with latest Rules/circulars/policies.
- 5.3 The sample questions so prepared should be updated regularly in accordance with the changing technology and job requirements.

**6.0 Date & Venue of written examination:**

- 6.1 The date of written examination and venue will be informed in a short notice after completion of the pre-selection training. Hence, employees are advised to be in readiness for written examination.
- 6.2 Supplementary written test will be conducted if necessary, in respect of staff who could not attend to the scheduled written examination for the reasons as envisaged in Para-223 of IREM Vol-I.

**7.0 Mode of selection:**

- 7.1 The post of JE/TRS being a safety one, there will be no relaxation in qualifying marks, for employees belonging to SC/ST community. They have to secure minimum 60% of marks in written test & 60% in aggregate on par with UR employees (Para 10.1.1 of S.C.No.320/1999).
- 7.2 The selection consists of Written Examination, Perusal of Record of service and Medical Examination.
- 7.3 Candidates are advised to be ready for written examination through OMR sheets or through CBT mode, prevailing at the time of written examination.
- 7.4 **Professional Ability** will be adjudged through written examination only. The employees must secure a minimum 60% marks in professional ability and 60% marks of the aggregate for being placed on the panel.
- 7.5 **Written Examination** will be objective type multiple choice question paper consisting of 110 questions (including 10 questions on Official Language Rules), of which employees are required to answer any 100 questions.
- 7.6 If the employee attempts more than 100 questions, the first 100 attempted questions will ONLY be evaluated. The questions attempted beyond first 100 questions will NOT be evaluated and ignored.

- 7.7 To ensure authenticity of the answers, **Cutting, over writing, erasing or alteration** of any type in the answer will NOT be accepted. Zero marks will be given for answers having correction or overwriting or alteration. The employees are strictly advised to note that such type of questions are treated as attempted questions i.e. they will be included in the first 100 attempted questions.
- 7.8 **No negative Marks:** There shall be NO negative marking for incorrect answers as selection is against promotional quota (PCPO /SC's SC No.159/2019).
- 7.9 The duration of examination will be 120 minutes.
- 7.10 Further provisions of PCPO/SC's SC No.212/2018 will be applicable for the said written examination.
- 7.11 **Medical Examination:** Employees qualified in written test must be fit in A-III (Aye-Three) medical classification. In the event of not meeting the requisite medical classification, their names will be dropped.
- 7.12 **Eligibility for empanelment:** On being found fit in prescribed medical classification, the names of selected employees shall be arranged in the order of seniority on the basis of factors/procedure in terms of Para-219 of IREM Vol-I in respect of this selection and in terms of PCPO/SC's Lr. No. P@605/XI, dt:22.08.07.
- 7.13 **Training:** The empanelled employees are required to undergo training for a period of 13 weeks in terms of PCPO/SC's SC No.22/2018.
- 8.0 **Notifying to the staff:**
- 8.1 The controlling officer/supervisor shall give wide publicity of the notification to all the eligible staff of ELS/LGD in Electrical (TRS)Department, on SC Division and notification should be displayed at conspicuous place. It is the responsibility of controlling officer/supervisor to circulate the notification among the staff concerned.
- 8.2 In terms of Railway Board's Lr.No.E(NG)I-72/PM1/166, dated 26.06.1972, PCPO/SC's S.C.No.213/72, the Senior Subordinate/Supervisor concerned has to furnish a certificate that "the eligible employees 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/O/SC. 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.
- 8.3 **The Notification, Sample Question Bank are placed on SCR website:**  
([www.scr.indianrailways.gov.in](http://www.scr.indianrailways.gov.in)→about us→ Divisions→Secunderabad→ Personnel Question Banks→ JE/ELS/LGD (SI.No.37 )

This issues with the approval of Competent Authority.

Encl: Syllabus (Annexure-A)

Digitally Signed by G  
Lakshmi Surekha

Date: 18-07-2024 14:25:28

Reason: Approved

(G.LAKSHMI SUREKHA)  
APO-M&EL/SC  
for Sr.DPO/SC

Copy to:

- 1) Sr.DEE/ELS/LGD    2) SDGM/Vig./SC (kind attention of Dy.CVO/P/SC)
- 3) OS/Selection Cell    4) OS/IT Cell: for uploading in website.
- 5) DSs/SCRES/SCRMU/AISCSTREA/SCROBCREA/SC division.

**SOUTH CENTRAL RAILWAY**  
**SECUNDERABAD DIVISION**

**SYLLABUS FOR PROMOTION AS JE IN TRS ORGANISATION through LDCE Quota.**

**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) 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) **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.

- C) **Electrical Safety and ACTS and Rules.** 1. Electricity act and safe rules and Shock treatment, first aid and use of Fire Extinguishers.

D) **SIMPLE ARITHMETIC CALCULATIONS**

- E) **APTITUDE FOR THE TRADE APPLIED, KNOWLEDGE OF ELEMENTARY PRINCIPLES OF THE TRADE AND TOOLS USED IN TRADE.**

**PART-B**

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

1. 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).
2. 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 ).
3. Study of current collection in 3Phase Locomotives, study of roof equipments of A.C. Loco.
4. Study of 3phase Locomotive Transformers, overhaul and maintenance of Transformers, Auto-Transformers, conditions for parallel operation of transformer, Maintenance and overhauling tests to be conducted on the transformer, testing of transformer.
5. Study of Auxiliary converter circuits and components and Auxiliary power supply and load sharing between BURs during normal condition and during isolation of one BUR.
6. Study of Transformer cooling circuit and function of TFP MPH.
7. Study of SR coolant circulation and function of SRMPH.
8. Machine room layout of 3phase locomotives. Locations of various equipment in Machine room.
9. Study of various types of contractors and relays, study of relays and contractors used in the 3phase Locomotives.
10. Study of batteries in 3phase locomotives, commissioning (initial charging), maintenance and reclamation and battery charging procedures.
11. Safe working on the 3phase locomotive; precautions to be taken, Fire preventive measures in the locomotive and study of fire fighting.
12. Study of circuit, analysis of WAG-9 Locomotives i.e., study of circuits, cabling Index and other drawings

13. 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 & LSFI
14. Study of WAG-9 Bogie, wheel arrangements, suspension arrangements and all mechanical features like elements of Vibration, Oscillation, Damping devices, Elasticity i.e., Springs and dampers etc.
15. Study of Sander gear and Brake rigging, various types of brake systems in 3phase Loco.
16. Different lubricants used in WAP 7/ WAG9 locomotives
17. Study of Pneumatic circuitry of WAG-9, Study of various Pneumatic Valves, braking system (E-70 System and CCB 2.0 – PTDC mode of working in CCB 2.0 locomotive. Different type of brakes available in WAG9 and WAP7 locomotives.
18. Study of maintenance schedules for various equipment in the 3phase Locomotive, its periodicity.
19. Study of 3phase Locomotives, testing, engine fitness and troubleshooting procedure.
20. RDSO Modification and SMIs implementation and maintenance of various records for 3phase Locomotives.
21. Study of Electronic devices i.e., IGBT and GTOs as control switches in power circuitry and auxiliary circuitry of 3phase Locomotives.
22. New Technologies: RTIS, RMS, TPWS, CAB-AC, Push-pull operation, MU-operation of WAG9, CVVRS.
23. Different types of contactors used in 3 phase locomotives ....126.7/1, 126.7/2, 126.6, 126, 218, 130.1 & 136.4
24. Frequent DDS messages –S/R interlock auto brake, S/R interlock loco brake, Error tachogenerator, S/R interlock MR low, ACP/train part, Brake electronic failed, 8.1stuck on/off, 8.41 stuck off/on, Low pressure Pan.
25. Working of harmonic filter and importance of 8.1, 8.2 & 8.41.
26. Various type of bearing used in 3 phase locomotives, minimum requirement of air flow levels permitted as per RDSO SM1 of 3 phase locomotives,
27. Loco CAB changing procedure with E 70 & CCB.
28. Safety items of electric locomotives.
29. Trouble shooting in cooling mode
30. Various types of transformers used in 3 phase locomotives.
31. Locomotive dimensions
32. Various type of SPMs and their issues
33. Primary, secondary, vertical and lateral clearances, wheel wear management,
34. Working of DBC & EBV.
35. Different types of VCU's
36. Hotel load converter (HOG).
37. S.C. Railway 76 point trouble shooting guide.
38. Various IGBT propulsion systems homed at ELS/LGD and Failure of various of auxiliary motors in three phase locomotives.

### **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
3. Rules and regulations about Official Language i.e., Hindi as Official Language