

## SOUTHERN RAILWAY

### SELECTION FOR PROMOTION FROM GROUP-C TO GROUP B SERVICE FOR THE POST OF AXEE/ADEE AGAINST 70% QUOTA ELECTRICAL ENGINEERING DEPARTMENT

Date: 18.04.2022  
Time : 11.00 hrs.

Total marks : 100  
Duration: 2 hrs.

#### Instructions to candidates:

1. Do not write your name or any other identification mark anywhere on the answer book other than the fly leaf.
2. All the columns in the fly leaf should be properly filled up.
3. Answer to all questions should be written in the answer sheet only and nothing should be written or scribbled in the question paper.
4. All objective type questions carry equal marks. .
5. Use of calculator is permitted.
6. Answers to the multiple choice type questions should be written in **Capital Letters only** (A) or (B) or (C) or (D).
7. No corrections of any type like given below will be permitted:
  - a) Cutting
  - b) Overwriting
  - c) Scoring of a ticked answer & ticking another answer
  - d) Erasing or modifying the answer in any way**Zero marks** will be awarded in such cases of corrections.
8. There shall be **negative** marking for incorrect answers. One-third of the marks allotted for each question will be deducted for every wrong answer.
9. Part "A" consist of 70 questions on Technical Subject and 10 questions Official Language Policy. Maximum of 70 questions can be attempted from this section. If more than 70 questions are attempted in Part "A", first 70 questions will be evaluated.
10. Part "B" has 30 questions on establishment and financial rules. Each question carry one mark. All questions can be attempted in this Part.

#### **Part "A" Technical and Official Language Policy**

1. A Buchholz relay can be installed on-  
(A) auto-transformers (B) air-cooled transformers  
(C).welding transformers (D) oil cooled transformers
2. The code of practice for earthing is governed by:-  
(A) IS: 3043 (B) IS: 4340  
(C) IS: 4043 (D) IS: 4430

3. Angle of overhead electrical line crossing to railway track shall be:-  
 (A) Obtuse angle (B) Acute angle  
 (C) Right angle (D) Angle does not matter.
4. If there is an open circuit in the rotor of a squirrel cage induction motor :-  
 (A) rotor will overheat (B) line fuses will blow  
 (C) motor will be noisy (D) motor will not start
5. An induction motor has a rated speed of 720 r.p.m. How many poles has its rotating magnetic field?  
 (A) 8 poles (B) 6 poles  
 (C) 4 poles (D) 2 poles
6. VRLA Batteries works on :-  
 (A) Oxygen recombination principle  
 (B) Hydrogen recombination principle  
 (C) Hydrogen-oxygen recombination principle  
 (D) None of the above
7. The train lighting wiring is :-  
 (A) two wire earthed system (B) two wire unearthed system  
 (C) one wire earthed system (D) none of the above
8. Motors used in RMPU coaches are :-  
 (A) DC motors (B) Synchronous motors  
 (C) Induction motors (D) None
9. The function of DC-DC converter is to feed :-  
 (A) Flasher light (B) Head light  
 (C) Tail lamp (D) None of the above
10. What is the supply voltage of EOG system?  
 (A) 415 V AC (B) 440 V AC  
 (C) 750 V DC (D) 750 V AC
11. The highest temperature in a vapor compressed system occur after:-  
 (A) Compressor (B) Condensation  
 (C) Expansion (D) Evaporation
12. What is the rating of Battery used in LHB AC Coach :-  
 (A) 800Ah (B) 70Ah  
 (C) 1100Ah (D) 90Ah

13. Dye Penetration Test is done to detect:-  
 (A) Acetylene content in oil (B) Methane level  
 (C) Surface crack (D) inside void in axle
14. "Back lash" term is related to.....  
 (A) TFP (B) Battery  
 (C) Gears (D) CBC
15. Which set of rules are to be verified on the completion of wiring on any new installation?  
 (A) Indian electricity rules,1950 (B) Indian electricity rules, 1956  
 (C) Indian electricity rules,1960 (D) None of these
16. If earth resistance is still showing high values after providing water, coke & salt. How you solve same problem ?  
 (A) Removed earth connection  
 (B) Additional earthing in series  
 (C) Additional earthing in parallel, whose earth resistance area should be in same zone  
 (D) Additional earthing in parallel, whose earth resistance area should be in separate zone
17. BFB mast is suitable at:-  
 (A) Normal location at straight track (B) Anchoring location  
 (C) At cross over (D) At curve track
18. Power block is granted to the OHE supervisors for heavy maintenance work by :-  
 (A) Section controller in consultation with the TPC  
 (B) TPC in consultation with the section controller  
 (C) Section controller with the permission of TPC  
 (D) TPC with the permission of section controller
19. Laminated core is used to reduce :-  
 (A) Hysterisis loss (B) Eddy current loss  
 (D) Copper loss (D) Iron loss
20. The term Curve Allowance is related with-  
 (A) Mast Length (B) Encumbrance  
 (C) Stagger (D) Implantation.
21. The Caution Board that must be displayed on FOB/ROBs -  
 (A). Lower Panto (B) DJ opens board  
 (C) Caution 25000 volts (D) Danger Men working.

22. When span length increased twice than sag in the conductor will be :
- (A) Two times (B) Four times  
(C) Remains same (D) Half times
23. Permit To Work (PTW) is essential for working on 25 kV AC OHE or near OHE within:-
- (A) 1 m (B) 2 m  
(C) 3 m (D) 4 m
24. Normally, insulated overlap is employed opposite FP. What precautions should be taken , when adjacent TSS supply is extended upto FP by closing bridging interrupter at SP ?
- (A) Handed over a caution order to driver for lower the panto before approaching insulated overlap at FP  
(B) Both side of FP, power supply should be switched -off  
(C) Both feeder CB should be in open position  
(D) All of the above
25. Current collection test is carried out in OHE to find out:-
- (A) Current carrying capacity of catenary wire  
(B) Current carrying capacity of contact wire  
(C) Current carrying capacity of different jumpers  
(D) Location of sparking during movement of pantograph
26. Winding of DC traction motor is connected to commuter by:
- (A) MIG Welding (B) TIG Welding  
(C) Brazing (D) Soldering
27. The width of EMU coach is
- (A) 3250 mm (B) 3600 mm  
(C) 3660 mm (D) 3680 m
28. The type of TM suspension in EMU is :-
- (A) Fixed (B) Axle hung nose suspended  
(C) Mounting pad (D) None of the above
29. If a 60 W and 100 W lamps in series and are connected to a source of supply, which lamp will give more light :-
- (A) 100 W (B) 60 W  
(C) Both will give same light (D) None of the bulb will glow.
30. In conventional Locos, the supply to compressor motors is through:
- (A) Electro Magnetic Contactor (B) Electro Pneumatic Contactor  
(C) Vacuum Circuit Breaker (D) MCB

31. In three phase locos BUR refers to:-  
 (A) Battery Charger  
 (B) Traction Converter  
 (C) Auxiliary Converter  
 (D) Control Electronics
32. Electro Pneumatic brakes are available in:  
 (A) WAG9 Locos  
 (B) WAP5 Locos  
 (C) WAG7 Locos  
 (D) EMU
33. Droppers are used in OHE for  
 (A) Leveling the contact wire  
 (B) To maintain stagger  
 (C) Reduced the sag in catenary wire  
 (D) None of the above
34. In regulated OHE, Where anti-creep point is provided?  
 (A) Starting of tension length  
 (B) Finishing of tension length  
 (C) Midway of tension length  
 (D) All of the above
35. An arrangement of OHE over a track, where two sets of OHE conductors are run parallel to each other for a short distance & provide smooth passage for pantograph, is called  
 (A) Turnout  
 (B) Crossover  
 (C) Neutral Section  
 (D) Overlap
36. In Un-insulated overlap, two OHE's are connected together by means of jumper, is called  
 (A) "C" jumper  
 (B) "F" jumper  
 (C) "G" jumper  
 (D) "S" jumper
37. Minimum electrical clearance short duration (vertical) between live & earth for 25 kV AC is..... As per Rly BD' LNo 2011/CEDO/SD/IRSOD/Elect/02 dated 14.03.2012. ACS No.-7 to the Indian Railway SOD(BG) 2004.  
 (A) 390 mm  
 (B) 200 mm  
 (C) 220 mm  
 (D) 340 mm
38. Which insulation class among following has highest temperature withstand capacity: -  
 (A) A  
 (B) B  
 (C) C  
 (D) F
39. In the transformer which of following winding has got more cross-section area:-  
 (A) Low voltage winding  
 (B) High voltage winding  
 (C) Primary winding  
 (D) Secondary winding
40. If pump discharge pressure is low, then probable cause is:-  
 (A) Lack of prime  
 (B) Moisture in lubricating oil  
 (C) Bent shaft  
 (D) Gas or air in liquid

41. In the cables, sheaths are used to:-  
 (A) prevent the moisture from entering the cable  
 (B) provide enough strength  
 (C) provide proper insulation  
 (D) none of the above
42. In Thermal Power plants the generator used are :-  
 (A) AC 3  $\emptyset$ , Induction Generators. (B) AC 1  $\emptyset$ , Synchronous Generators.  
 (C) D.C. Shunt Generators. (D) AC 3  $\emptyset$  Synchronous Generators.
43. If the relay setting of 60/5 CT is at 3.75, then the tripping will be at :-  
 (A) 60 Amp. (B) 45 Amp.  
 (C) 30 Amp. (D) 50 Amp
44. Cross section area of cadmium copper catenary wire normally used is:-  
 (A) 125 sqmm (B) 150 sqmm  
 (C) 65 sqmm (D) 100 sqmm
45. While welding locomotive body or bogie, why it is advisable to fix negative cable close to welding stop:-  
 (A) To have better quality of weld  
 (B) It will reduce resistance  
 (C) To reduce current requirement  
 (D) To ensure that current does not pass through and bearing, particularly axle box bearing
46. In side bearing foundation , the  
 (A) Bending movement on the mast is resist by the soil at base only  
 (B) Bending movement on the mast is resist by the soil both sides of the foundation only  
 (C) Bending movement on the mast is not only resisted by the soil at the base but also by the both sides of the foundation  
 (D) None of above
47. For the protection of single-phase 1.5 kW motor, a MCB of rating should be provided  
 (A) 10 A (B) 16 A  
 (C) 32 A (D) 63 A
48. In case of which service coasting period is long:-  
 (A) Main Line Service (B) Urban Service  
 (C) Suburban Service (D) Coasting period is same in all services..
49. Which of following is not a standard bogie wheel arrangement in Locomotives: -  
 (A) Co-Co (B) Bo-Bo  
 (C) Bo-Bo-Bo (D) Bo-Co

50. Maximum air pressure in electric loco brake cylinder with A9 application is:  
 (A) 2.5 kg/cm<sup>2</sup> (B) 3.5 kg/cm<sup>2</sup>  
 (C) 2.0 kg/cm<sup>2</sup> (D) 5.0 kg/cm<sup>2</sup>
51. Which of the following Locomotives have highest starting effort:-  
 (A) WAP5 (B) WAP7  
 (C) WAG7 (D) WAG9
52. Which of following instrument can detect Train Parting: -  
 (A) ESMON (B) Air flow indicator  
 (C) FP Gauge (D) Voltmeter
53. Gapless lighting arrester uses which of following material: -  
 (A) Silicon Oxide (B) Ferrous Oxide  
 (C) Zinc Oxide (D) None of above
54. Which relay prevents fire in AC Coaches if blower motor stops working: -  
 (A) Over current relay (B) Over voltage relay  
 (C) MMVR (D) Vane Relay
55. Emergency braking distance of Express Train with 24 Coaches on less gradient is:-  
 (A) Less than one Km (B) 1.8 Km  
 (C) 2 Km (D) 2.5 Km
56. Material used for current collection in Pantograph is :-  
 (A) Aluminium (B) Metallised Carbon Strip  
 (C) Silver Strip (D) Stainless Steel Strip
57. Shunting contactors are provided in the loco for the purpose of :-  
 (A) Increasing the speed (B) To decrease the speed  
 (C) To stabilize the speed (D) to stop the train.
58. From the point of comfort and energy efficiency the temperature setting of Air Conditioners should be kept at:-  
 (A) 16° C (B) 19° C  
 (C) 25° C (D) 30° C
59. As per IE rules permissible variation in the frequency variation of:-  
 power supply are:-  
 (A) ± 1 % (B) ± 3 %  
 (C) ± 0.5% (D) ± 10%
60. The power factor of the AC supply can be improved by using :  
 (A) Synchronous generator (B) Universal motor  
 (C) Synchronous condenser (D) SCR

61. Internal resistance of a cell is 0.1 ohm and 10 cells are connected in series to form a battery :- supplying a current of 1 A. The power lost in the battery is:-  
 (A) 0.5 W (B) 1 W  
 (C) 5 W (D) 50 W
62. The Visible, Audible, Partial discharge at the surface of conductor at high:- voltage is called -  
 (A) Skin affect (B) Corona  
 (C) Creep (D) None of these
63. Higher Creepage Distance in insulator is important as:-  
 (A) It improves mechanical Strength  
 (B) It protects insulators against reptile creeping in  
 (C) It helps in supporting wire  
 (D) It reduces chances of tracking
64. The kVAR rating required for improving the power factor of a load operating at 1000 kW and 0.8 power factor to 0.95 is \_\_\_\_\_.  
 (A) 290 kVAR (B) 500 kVAR  
 (C) 50 kVAR (D) 100 kVAR
65. The purpose of evaporator is :-  
 (A) To absorb heat from the coach and to send cooled air in to the coach  
 (B) To draw refrigerant vapor from the cooling coil and boost the temperature and pressure of refrigerant.  
 (C) To reject the heat of refrigerant to the water or air and to convert refrigerant vapour into liquid  
 (D) To control and pump the refrigerant to the cooling coil.
66. 9-Ton insulator is used mainly  
 (A) To support catenary & contact on structure (B) Support cross span wire  
 (C) ) Support in section insulator assembly (D) Anchoring of OHE conductors
67. Average illumination in house is:-  
 (A) 10-20 lux (B) 40-50 lux  
 (C) 100-150 lux (D) 400-500 lux
68. Solar cells use which of following material  
 (A) Copper (B) Silver  
 (C) Silicon (D) Zinc
69. Which type of Power Plant can never have 100 percent load factor?  
 (A) Peak load plant (B) Base load plant  
 (C) Nuclear power plant (D) Hydro electric plant



70. What will be energy charges for industry consumes if maximum demand is 1600 KW at 0.8 pf and units consumed are 50000 for the month. Energy charges are Rs 50 per KVA and Rs 2 per KWh.  
 (A) Rs 1,00,000 (B) Rs 2,00,000  
 (C) Rs 5,00,000 (D) None of above
71. When was Official Languages Rules passed?  
 (A) 1966 (B) 1970  
 (C) 1978 (D) 1976
72. In which course a Category "B" employee, defined under Hindi Teaching Scheme required to be trained?  
 (A) Pragya (B) Praveen  
 (C) Prabodh (D) Parangat
73. What is the amount of Lumpsum Award for passing Praveen course?  
 (A) Rs 1000 (B) Rs.1500  
 (C) Rs 2000 (D) Rs 2500
74. What is the target fixed for letters in Hindi sent from 'C' region to 'A' 'B' and 'C' region?  
 (A) 30% (B) 50%  
 (C) 55% (D) 60%
75. Which part of the Constitution contains provisions regarding Official Language?  
 (A) Part XV (B) Part XVII  
 (C) Part XIII (D) Part XVI
76. Which article of the constitution contain provision regarding the official language of States?  
 (A) Article 250 (B) Article 300  
 (C) Article 320 (D) Article 345
77. Which of following the states comes under Region 'C'?  
 (A) Chhattisgarh (B) Gujarat  
 (C) Chandigarh (D) West Bengal
78. Who is responsible for the violation of Section 3(3) of Official Language Rules, 1963?  
 (A) Rajbhasha Adhikari (B) Head of Office  
 (C) The Officer signing such Documents (D) Head of Department
79. What is the periodicity of the meetings Hindi Salahkar Samiti?  
 (A) Once in a month (B) Once in two months  
 (C) Once in three months (D) Once in six months.
80. Who prepares Annual Programme on Official Language?  
 (A) Ministry of Home Affairs (B) Railway Board  
 (C) Ministry of Education (D) Zonal Railway

## Part "B" Establishment and Financial Rules

81. How much percentage of deviation from shortest route is allowed in privilege pass?  
(A) 10% (B) 15%  
(C) 20% (D) 30%
82. Which of the following is not termed as penalty under DAR 1968?  
(A) Censure (B) Withdrawing of promotion  
(C) Suspension (D) None Ans.
83. Minimum period of with holding of increment is :-  
(A) 3 months (B) One year  
(C) 6 months (D) 2 months
84. What number of staff are to be called in a selection of Gr 'C' post?  
(A) Equal to the number of vacancy (B) 3 times the number of vacancies  
(C) 5 times the number of vacancy (D) None of the above
85. How many Officers are required for holding a departmental suitability test?  
(A) 1 (B) 2  
(C) 3 (D) 4
86. What is the percentage for D.R.Quota for selection of Group-C In GDCE:-  
(A) 25% (B) 30%  
(C) 50% (D) 20%
87. Paternity leave is admissible with less than two surviving children for a period of:-  
(A) 10 days (B) 20 days  
(C) 15 days (D) 25 days
88. Authority competent to grant extension of time for completion of contract: -  
(A) Accepting authority (B) Contract signing authority  
(C) One level above accepting authority (D) Executive concerned
89. The rates of daily Allowance on tour admissible for Employees in level 6 to 8 is Rs \_\_\_\_  
(A) Rs 900 (B) Rs 1000  
(C) Rs 500. (D) Rs 800
90. The total leave encashed during the entire career shall not exceed \_\_\_\_ days.  
(A) 60 (B) 50  
(C) 70 (D) 100

91. The final booking of Non-Stock items is done under revenue head: -

- (A) PU 20  
(B) PU 27  
(C) PU 28  
(D) PU 32

92. Standard Hours of duty of Continuous category of employees is \_\_\_ hrs in a week: -

- (A) 42 Hrs  
(B) 45 Hours.  
(C) 48 Hrs  
(D) 72 Hrs.

93. What is the time limit for submission of written statement of defence by the delinquent Railway Servant?

- (A) 6  
(B) 7  
(C) 5  
(D) 10

94. An authority not lower than \_\_\_\_\_ shall impose the penalties of Dismissal/Removal/Compulsory retirement.

- (A) Disciplinary Authority.  
(B) GM  
(C) Appellant Authority  
(D) Appointing Authority

95. Performance Guarantee for Services Contract is \_\_\_\_\_

- (A) 5 %  
(B) 2 %  
(C) 10 %  
(D) 20 %

96. Senior employee will get stepping up of pay vis-a-vis junior so promoted if the junior: -

- (A) Promoted on regular post on regular measure  
(B) Promoted on ad-hoc basis  
(C) Promoted in an ex-cadre post  
(D) All are correct

97. Composite Transfer Grant shall be granted at the rate of \_\_\_\_\_ of last month's basic pay :-

- (A) 50%  
(B) 75 %  
(C) 80%  
(D) 100 %

98. \_\_\_\_\_ equal to leave on half salary, will be drawn in case the employee is under suspension.

- (A) Dearness Allowance  
(B) Subsistence Allowance  
(C) Suspension Allowance  
(D) Compensatory Allowance

99. Stock which provide for an emergency in case of default by the suppliers and also to take care of fluctuations in consumptions, is known as:-

- (A) Emergency stock  
(B) Custody stock  
(C) Ordinary stores  
(D) Buffer stock A

100. The proposals for the incurrence of expenditure by the railways are to be presented to the Parliament in the form of \_\_\_\_\_.

- (A) Demands for Grants  
(B) Vote on Account  
(C) Bill of Grants  
(D) Expenditure proposal

101. When the firms are selected and tender enquiry is sent to them, it is a case of:-  
(A) Open tender (B) Limited tender  
(C) Bulletin tender (D) Global tender
102. In the case of deposit works for private parties, the departmental charges are levied at the rate of:-  
(A) 12.5% (B) 10%  
(C) 6% (D) None of above
103. Part A of SOP deals with:-  
(A) Work Matters (B) Establishment Matters  
(C) Medical Matters (D) Miscellaneous Matters
104. The oldest working fund (Source of Finance) in Railways is  
(A) DRF (B) DF  
(C) SRSF (D) RRSK
105. Plan Head 53 relates to:-  
(A) Traffic Facility works (B) Track Works  
(C) Electrical Works (D) Passenger Amenities Works
106. Stock Sheets refer to:-  
(A) List of Stock items (B) Requisition of Stock items  
(C) Cost of Stock items (D) Shortage in the Stores of Stockholder
107. What constitutes the maximum percentage of total revenue expenditure of Indian Railways: -  
(A) Fuel Cost (B) Cost of Salary  
(C) Material Cost (D) Allowances
108. Under Employees Compensation Act, employer shall not be liable to pay compensation in respect of any injury which does not result in the total or partial disablement of the workman for a period exceeding ----- days;  
(A) 3 (B) 2  
(C) 5 (D) 7
109. The ceiling limit on the profit earned by each worker is \_\_\_\_ of standard basic wage of the worker :  
(A) 15% (B) 25%  
(C) 50% (D) 80%
110. Similar works grouped as one and sanctioned by the Board with lumpsum in works programme are called:-  
(A) Lumpsum works (B) Umbrella works  
(C) Itemised works (D) None of the above