दक्षिणमध्यरेलवे/SOUTH CENTRAL RAILWAY
नांदेडमंडल/Nanded Division
मंडलकार्यालय, कार्मिकशाखा, नांदेड/Divisional Office, Personnel Branch,Nanded – 431605

No.SCR/P.NED/210(a)/L2/JE(GS)/25% PQ Date: 06.10.2025

SSE/TL-AC/NED, SSE/E/M/NED
SSE/E/M/PAU & SSE/E/M/AWB

Sub:- Formation of panel for promotion to the post of Junior Engineer(GS) in Pay Matrix Level- 6 (GP Rs. 4200/-) against 25% Promotional Quota in Electrical Department on NED Division.

Ref:- PCPO/SC's Lr.No.SCR/P-HQ/226/SEL/2025, dt.25.09.2025.

* * *

With reference to the letter cited, it is proposed to hold a selection for formation of panel to the post of Junior Engineer/GS in Pay Matrix Level-6 (Grade Pay Rs. 4200/-) against 25% Promotional Quota in Electrical Department on Nanded Division.

The No of vacancies assessed is as detailed below :-

SC	ST	UR	Total	PwBD			
				VI(LV)	HI	LD	OD
01	00	01	02	01	00	00	00

The list of senior most eligible staff working as Sr.Tech in PM,TL & AC Wings of Electrical Department on Nanded Division in Level-6 of Pay Matrix of VII CPC (PB-2 Rs. 9300-34800 Grade Pay Rs. 4200/- of VI CPC) and who are in normal zone of consideration in 1:3 ratio based on their seniority is enclosed in Annexure-I.

Syllabus & Question Bank :- The Syllabus & Question Bank prescribed for selection to the post of Junior Engineer/GS against 25% Promotional Quota is enclosed herewith.

Date of Examination:- The date, Venue and time of examination will be intimated separately. However, it is to be advised to the staff listed in Annexure-I that they should be in readiness to appear for the examination at a short notice.

Notifying to the staff: - In terms of Railway Board's Lr. No. E(NG)I-72/PMI/166, dt.26.06.1972, CPO/SC's S.C. No. 213/1972, 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 through Controlling Officer/Branch Officer in one bunch to DPO/Co-ord/NED. 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.

(Contd…2nd…Page)

The unwillingness, if any, received from the employees is to be forwarded through Controlling Officer/Branch Officer in one bunch to DPO/Co-ord/NED on or before **15.10.2025**. The unwillingness submitted after this date will not be accepted and they will reckon for selection and no additional persons from the list of employees kept as stand-by, will be called for the selection to make good of the shortfall.

The selection consists of written examination/CBT Mode only and perusal of records and qualified employees are required to be found fit in Medical classification Bee-one.

Encl : Annexure-I, Syllabus &
Question Bank

(रणजीत कुमार/Ranjeet Kumar)
सहायक कार्मिक अधिकारी(सामान्य)/APO(Genl)
for Divisional Personnel Officer/Co.Ord/NED

C/- PCPO/SC & PCEE/SC- for kind information please
C/- Sr. DEE/M/NED, ADEE/M/NED for information and necessary action.
C/- OS/Staff/Sr.DEE/M/O/NED
C/- Ch.OS/Confidential/NED
C/- DS/SCRE Sangh,SCRM Union, AISCT REAssn./NED.

for Divisional Personnel Officer/Co.Ord/NED

ANNEXURE-'I'

LIST OF EMPLOYEES TO BE ALERTED FOR SELECTION (WRITTEN TEST) TO THE POST OF JE/GS/ELECRTRICAL IN PAY MATRIX LEVEL-6(GP RS. 4200) IN ELECTRICAL DEPARTMENT AGAINST 25% PROMOTIONAL QUOTA.

Sl. No.	Name (S/Sri)	Community	Design & Wing	Stn.	DOB	DOA	DOE
1	Naresh Sriram walade	ST	Sr.Tech(PM)	AK	09.10.68	22.08.88	22.06.15
2	Manohar Dinkar Tayede	SC	Sr.Tech(TL)	AK	25-06-66	22-03-98	01.09.16
3	Syed Basith Ali	UR	Sr.Tech(TL)	NED	04.06.80	19.07.01	01.09.16
4	Shinde Ramdas Kashinath	SC	Sr.Tech(TL)	NED	01.02.76	19.07.01	10.01.18
5	Sunil Govindrao Chabukswar	SC	Sr.Tech(TL)	AWB	31.08.73	06.01.02	10.01.18
6	T.A.Narendra Kumar	SC	Sr.Tech(PM)	NED	01.04.75	19.12.96	13.03.18
Stand-by							
1	Kamble Atish	SC	Sr.Tech(AC)	NED	15.06.78	17.07.01.	19.12.18
2	Kale Vittal Digambar	ST	Sr.Tech(PM)	SELU	12.07.76	15.07.01.	31.12.18

APO/NED

PROFORMA

Willingness/Unwillingness to appear for the selection to the post of JE/GS in Pay Matrix Level-6 (GP Rs. 4200/-) against 25% Promotional Quota in Electrical Department on NED division.

I, ..., willing/unwilling to attend the selection for promotion to the post of JE/GS in Pay Matrix Level-6 (GP Rs. 4200/-) against 25% Promotional Quota in Electrical Department with reference to Letter No.SCR/P.NED/210(a)/L2/JE(GS)/25% PQ, dt.06.10.2025.

Station:
Date:

Signature:
Name:
Desing/Station:

Forwarded to DRM(P)/NED

Signature:
Name:
Desing/Station:

4533856/2025/O/o Dy.CEE/PLG/SCR

SYLLABUS FOR WRITTEN EXAMINATION FOR THE POST OF JUNIOR ENGINEER (GS) IN PAY BAND Rs.9300-34800 + GP:Rs.4200 IN ELECTRICAL (GS) DEPARTMENT.

1.	Knowledge about how to read/write English/Hindi letters, numerals and metric scales.
2.	Knowledge about foot-rule, Hydrometer, Voltmeter, Ammeter, Multimeter and other meters connected to his job for measurement of DC & AC voltages, currents, power, power factor etc.
3.	Knowledge about various symbols used in Electrical Circuits and Panel Boards.
4.	Knowledge of use, care and maintenance of servicing tools, measuring instruments and gauges pertaining to his trade.
5.	Knowledge of various electrical parameters like current, voltage, wattage, resistance, capacitance, etc. and their measuring units.
6.	Knowledge about types, sizes and current carrying capacity of various wires, cables and fuses and be conversant with the use of switches, plugs, fuses, etc.
7.	Knowledge about general lighting and provision of lighting in the yards, service buildings, quarters, streets, platforms, etc. Use of LED in General Services applications. Knowledge about various types of Lighting system and illumination.
8.	Knowledge about use of common hand tools and equipments pertaining to his trade.
9.	Knowledge about simple wiring diagrams in connection with work.
10.	Knowledge about repairing and maintenance of fans, lights, refrigerators and fittings related to his job.
11	Knowledge about Substations, different types of transformers & maintenance and earthing.
12.	Operation and maintenance of HT/LT Switch Gear.
13	Maintenance schedules of all major Electrical Equipments.
14	Knowledge about Stand by power supply systems (DG Sets, UPS, Battery Energy Storage System)
15	Knowledge about the rules and regulations regarding electrical safety & artificial respiration.
16	General knowledge of different types of pumps, their working and maintenance.
17	General knowledge of different types of motors used in fans, fridge/deep fridge, pumps, etc.
18	Knowledge regarding energy conservation methods and energy efficient technology in Electrical system.
19	Knowledge regarding fire extinguishers.
20	Knowledge regarding using solar power, wind, Hybrid generating system.
21	Knowledge about various Electric tariff methods
22	Practical knowledge about Railway electrical working and apparatus.
23	Knowledge about Power Line Crossings.
24	Passenger amenities norms such as Lifts, Escalators, Travellators, water coolers, illumination etc.
25	Shunya/Shunya+, Star rating, ISO50001 certification & Green Rating of buildings.
26	ABT meters, net metering, smart metering and SCADA system for GS application.

27	Energy Efficiency Policy (Sustainable Buildings, IR-NIYANTRAC, Energy Efficiency in Equipments & Appliances, Power quality restoration and capacity building.
28	Knowledge about Investment Grade Energy Auditing.
29	Knowledge about Stores and UDM
30	Knowledge about Establishment rules.
31	Knowledge about official language policy of Indian Government and use of Hindi in official correspondence.
32	Must have the knowledge of working of AC units, Water Coolers, Refrigerators, Deep-freezers, types of compressors and their application.
33	Knowledge about Train Lighting and Air Conditioning coach wiring in all types of coaches.
34	Cells used in Train Lighting and Air Conditioning coaches including Power Cars and Vande Bharat. Must know the working principles of cells. Charging/discharging methods and testing procedures of various types of cells.
35	Inverters used in all types of Train Lighting and Air Conditioning coaches.
36	Alternators in SG coaches.
37	RRU/ERRU in SG coaches
38	All types of battery chargers in all types of Train Lighting and Air Conditioning coaches including Power Cars and Vande Bharat.
39	All types of passenger amenities (like lights, fans, mobile charging sockets & etc.,)
40	Basic principles of refrigeration and Air conditioning system in all types of AC Coaches including Vande Bharat coaches. Must have the knowledge of properties of refrigerant gas and its application.
41	Must have the knowledge of testing, charging and commissioning of AC units, Refrigerators.
42	All Electrical safety items in all types of passenger coaches
43	Maintenance and trouble shooting of all electrical equipments in all types of coaches including pantry cars, power cars & Vande Bharat coaches.
44	Knowledge about all types of SG(ICF) Coaches, LHB Coaches & HOG System
45	Maintenance and trouble shooting of DA Sets in Power cars
46	Knowledge of repairing & maintenance of carriage fans, lights & fittings, alternators and other equipements in coaches
47	Must be able to read Hindi works and small sentences used in Log books and instructions given on the AC coach equipments.
48	Passenger Amenities in AC Coaches.

4533851/2025/O/o Dy.CEE/PLG/SCR

OBJECTIVE QUESTION BANK FOR GENERAL SERVICES

JUNIOR ENGINEER - GS

POWER MAINTENANCE

CONTENTS

Item No.	Description	Page No.
1.	GENERAL ELECTRICAL ENGINEERING	03
2.	TRANSFORMERS	17
3.	EARTHING	24
4.	LIGHTING AND ILLUMINATION	26
5.	D.G. SET	31
6.	PUMP	35
7.	TRACK CROSSING	41
8.	INDIAN ELECTRICITY RULES	45
9.	POLICY	47
10.	ELECTRICAL UNITS: EQUIVALENTS & FORMULAE	51
11.	INDUCTION MOTOR	54
12.	CABLES	60

1. GENERAL ELECTRICAL ENGINEERING

1. For the protection of single-phase 1.5 kW motor, a MCB of rating should be provided **[b]**

(a) 10 A **(b) 16 A**

(c) 32 A (d) 63 A

2. The low power factor results in **[a]**

(a) **Increased losses** (b) Decreased losses

(c) No effect on losses (d) Better generating efficiency

3. Low power factor **[b]**

(a) Aids the voltage regulation (b) **Increase the voltage regulation**

(c) Decrease the voltage regulation (d) None of the above

4. The power factor of the AC supply can be improved by using **[c]**

(a) Synchronous generator (b) Universal motor

(c) Synchronous condenser (d) SCR

5. A distribution line of 440 V is classified as [b]

(a) LV **(b) MV** (c) HV (d) EHV

6. Which of the following is not used as a overhead conductor [c]

(a) ACSR (b) Weasel **(c)PILCA** (d) Zebra

7. Which of the following reduces the power factor [d]

(a) Motor on no load (b) Tube lights (c) Fans **(d) All of the above**

8. Under high voltage test cable shall withstand an AC voltage of [b]

(a) 1.5 kV **(b) 3 kV** (c) 5.2 kV (d) 7.2 kV

9. Under high voltage test cable shall withstand a DC voltage of [d]

(a) 1.5 kV (b) 3 kV (c) 5.2 kV **(d) 7.2 kV**

10. Under water immersion test cable is immersed in a water bath at [c]

(a) 40° C (b) 50° C **(c) 60° C** (d) 70° C

11. For water immersion test, cable is immersed in hot water at specified temperature, after 24 hrs the voltage applied between conductor and water for five minutes is [d]

(a) 3 kV (b) 4 kV (c) 5 kV **(d) 6 kV**

12. Unit of energy is [b]

(a) Kilo volt hours **(b) Kilo watt hours** (c) Kilo watt

13. As per Ohm's law [a]

(a) **V = IR** b) V = I/R c) R = V X I

14. Unit of resistance is [c]

(a) Ampere b) Volts **c) Ohm** d) none of the above

15. In three phase 415 volts 50 Hz supply, the phase to phase voltage is [b]

(a)220 Volts **b) 415 volts** c) 440 volts

16. In three phase 415 volts 50 Hz supply, the phase to neutral voltage is [b]

(a) 220 volts **(b) 240 volts** (c) 440 volts

17. In 4 sq. mm PVC wire, 4 sq. mm stand for [c]

(a) Thickness of wire (b) Length of wire

(c) **The area of thickness of wire**

18. The instrument to measure the light is called [b]

(a) Tong tester **(b) Lux meter** (c) Micro meter

19. 10 hours use of 500 watt lamp will consume the energy [c]

(a) 10 units (b) 20 units **(c) 5 units**

20. No. of poles in MCB/TPN is [b]

(a) 2 poles **(b) 4 poles** c) 3 poles

21. A.C. is converted into D.C. by [d]

(a) Dynamo (b) Motor.

(c) Transformer **(d) Rectifier**

22. Farad is a unit of [b]

(a) Flux **(b) Capacitance**

(c) Mutual inductance (d) Resistance of a conductor

23. A kilowatt-hour is a unit of [a]

(a) **Energy** (b) Electrical potential

(c) Power (d) Electric current

24. An electric lamp is marked 100 watt. It is working on 200 Volts. [a]

The current through the lamp is given as

a) **0.5 Amp.** (b) 0.2 Amp. (c) 5.0 Amp. (d)1.0 Amp.

25. Before carrying out O/H maintenance following is due [d]

a) Transformer is switched off

b) DG set is switched off

c) HT panel is switched off

d) **Respective O/H feeder is switched off and earthed**

26. In house wiring the red wire indicates the [a]

a) **Phase** (b) Neutral (c) Earth wire (d) Dead wire.

27. In house wiring the black wire indicates the [b]

a) Phase **(b) Neutral** (c) Earth wire (d) Dead wire

28. In house wiring the green wire indicates the [c]

a) Phase (b) Neutral **(c) Earth wire** (d) Dead wire.

29. In 4 wire electric circuit, the black conductor is used for [b]
a) Phase **(b) Neutral** (c) Earth wire (d) Armour

30. In cabling system the earth is connected with conductor having [d]
a) Red (b) blue (c) yellow **(d) Armour**

31. Unit of current is [b]
a) Watt **(b) Ampere** (c) Volt (d) ohm

32. Heater element is made up of [b]
a) Tin **(b) Nichrome** (c) Silver (d) Any above

33. Filament of incandescent lamp is made of [c]
a) Tin (b) Nichrome **(c) Tungusten** (d) Silver

34. An insulator should have [a]
a) **High resistance** (b) High conductance
(c) High conductivity (d) All of the above

35. Which of the following is used to make electric connections [d]
a) Solder (b) PG clamp
(c) Thimbles **(d) All above**

36. Instrument used for measuring the speed of rotating machines/ appliances is [b]
a) Lux meter **(b) Tachometer** (c) Micrometer (d) None above

37. Instrument used for measuring the thickness of wire/strip is [c]
a) Lux meter (b) Tachometer **(c) Micrometer** (d) None above

38. Instrument used for measuring the voltage across a circuit is [b]
a) Ammeter **(b) voltmeter** (c) Thermometer (d) None above

39. Instrument used for measuring the current is [a]
a) **Ammeter** (b) voltmeter (c) Thermometer (d) None above

40. Instrument used for measuring the temperature is [c]
a) Ammeter (b) voltmeter **(c) Thermometer** (d) None above

41. Illumination level is measured in terms of [a]
a) **Lux** (b) Volt (c) Ampere (d) Ohm

42. Insulating resistance is measured by using [b]
a) Multimeter **(b) Insulation Megger** (c) Voltmeter (d) Hydrometer

43. Which of the following is used for rectification of AC supply [a]
a) **Diodes** (b) Transistors (c) Capacitor (d) Resistors

44. Which preparation should be done starting a new wiring [a]

a) **Prepare a wiring diagram** (b)Prepare for shock treatment

(c) Both a & b (d) None of the above

45.In wiring circuit the fuse will be placed on [a]

(a) Phase (b) Neutral

(c) Earth (d) Any of the above

46. Which of the following tests should be done before connecting a wiring to the main line [a]

(a) IR test (b) Continuity test (c) Polarity test (d) Any above

47.Which of the following is a common wiring fault [d]

(a) Short circuit (b) Open circuit(c) Fuse blown **(d) All above**

48.Wattage rating range of electric kettle is [b]

(a) 50-500 W **(b) 350-1000 W** (c) 1000-1500 W (d) 1200-1600 W

49. Device used for auto off an electric iron is [a]

(a) Thermostat switch (b) Overload relay(c) Time delay switch (d) Any of the above

50.Can you repair an immersion rod [a]

(a) No (b) Yes (c) It depend on condition (d) None above.

51.A wire gauge is used to measure diameter of [a]

(a) Wire (b) cable (c) OH conductor (d) Any above

52.To improve the power factor, capacitors are connected in the [a]
circuit as

(a) Parallel path(b) Series path (c) Any of a & b (d) None of the above

53. To switch ON or switch OFF the supply in accordance with day light,
following is used [a]

(a) Light dependent resistor (b) Light emitting diode

(c) Any of a & b (d) None of the above

54 In order to draw more current from the electric source [a]

(a) **Resistors are connected in parallel**
(b)Resistors are connected in series
(c) Resistors are connected in series and parallel
(d) None of the above.

55 If a 60 W and 100 W lamps in series and are connected to a source of supply,
which lamp will give more light [b]

(a) 100 W **(b) 60 W**

(c) Both will give same light (d) None of the bulb will glow.

56 Power is defined as [b]

(a) Capacity of doing work **(b) Rate of doing work**
(c) Product of force and distance (d) Energy dissipated by load.

57 Unit of electric Energy is [c]

(a) Kilowatt (b) watt
(c) Kilowatt hour (d) watt hour

58 The internal resistance of battery is increased by [a]
(a) **Increase in no. of cells**
(b) Decrease in no. of cells
(c) None of the above
(d) Both a and b

59 A generators converts [c]
(a) Mechanical energy into light
(b) Electrical energy to mechanical energy
(c) **Mechanical energy to electrical energy**
(d) None of the above

60 Power factor of AC circuit is equal to [c]
(a) Tan of phase angle (b) Sine of phase angle
(c) Cosine of phase angle (d) None of the above

61 Resistance of open circuit is equal to [b]
(a) Zero **(b) Infinity**
(c) Less than 1 ohm (d) None above

62 Laminated core is used to reduce [b]
(a) Hysteresis loss **(b) Eddy current loss**
(c) Copper loss (d) iron loss

63 Which of the following is not a non conventional energy source [d]
(a) Solar (b) Bio gas
(c) Wind **(d) Electricity**

64 Solar energy is used for [d]
(a) Lighting (b) Cooking
(c) Battery charging **(d) All above**

65 Solar and wind hybrid system is [a]
(a) **Becoming popular** (b) Not possible
(c) Conventional energy source (d) None of the above

66 Bio gas depends on [b]
(a) Electrical energy **(b) Waste products**
(c) Both a and b (d) None of the above

67 Which of the following is not a constituent of a solar lighting system [d]
(a) Photo voltaic cell (b) Back up batteries
(c) Charger **(d) Earth wire.**

68 Which of the following is not a type of fuse [c]
(a) HRC (b) Rewirable
(c) Ceramic (d) Dropout

69 Which of the following is not a type of generating station? [d]
(a) Thermal (b) Nuclear (c) Hydro **(d) Atmospheric**

70 Which of the following is not a part of overhead distribution line [d]
(a) Conductor (b) Insulator (c) Cross arms **(d) Thimbles**

71 Type of insulator not used in a 3 phase, 440 V overhead distribution line [c]
(a) Pin (b) Shackle
(c) Disc (d) None above

72 Instrument connected in the circuit with the ammeter (in panel) to facilitate the measurement of current is [a]
(a) **Current transformer** (b) Potential transformer
(c) Excitation transformer (d) None of the above

73 Capacitor opposes [a]
(a) **Instantaneous change of voltage** (b) Instantaneous change of current
(c) Instantaneous change in resistance (d) None of the above

74 Inductor opposes [b]
(a) Instantaneous change of voltage
(b) **Instantaneous change of current**
(c) Instantaneous change in resistance
(d) None of the above

75 Current is [a]
(a) **Rate of flow of charge** (b) Gradual change in resistance
(c) Linear change in capacitance (d) None of the above.

76 When resistances are connected in parallel, the equivalent resistance [a]
(a) Decreases (b) Increases
(c) No change (d) May increase or decrease

77 When resistances are connected in series, the equivalent resistance [b]
(a) Decreases **(b) Increases**
(c) No change (d) May increase or decrease

78 Diode allows the flow of the current [a]
(a) In one direction (b) In both the directions
(c) Flow of current not allowed (d) None of the above.

79 When capacitances are connected in parallel, the equivalent capacitance [b]
(a) Decreases **(b) Increases**
(c) no change (d) May increase or decrease

80 When capacitances are connected in series, the equivalent capacitance [a]
(a) Decreases (b) Increases
(c) No change (d) May increase or decrease

81 Two lamps of 60 W and one of 100 W are connected in Parellel to a supply 220 V, the current flowing in the circuit will be [a]
(a) 1A (b) 2A
(c) 3A (d) 4A

82 A 2 x 40 W box type fitting glows for 10 hrs in a day, units consumed per day will be [c]
(a) 0.72 (b) 0.04
(c) 0.8 (d) 1

83 A 2 x 40 W box type fitting glows for 10 hrs in a day, electric charges for the month of June @ Rs. 3/- per unit will be Rs. [c]
(a) 18 (b) 3.60
(c) 72 (d) 90

84 One ordinary ceiling fan works for 12 hrs in a day, units consumed per day will be [a]
(a) 0.72 (b) 0.04
(c) 0.8 (d) 1

85 One ordinary ceiling fan works for 12 hrs in a day, electric charges per day @ Rs. 2/- per unit will be [b]

(a) 0.72 **(b) 1.44**
(c) 0.8 (d) 1

86 One 20 inch desert cooler (150 W) works for 8 hrs per day, units consumed per day will be [a]

(a) 1.2 (b) 1.8
(c) 2.1 (d) 2.4

87 One 20 inch desert cooler (150 W) works for 8 hrs per day, electric charges for the month of July @ Rs. 3/- per unit will be [a]

(a) 111. 6 (b) 110.2 (c) 90 (d) 115.3

88 A geyser of 25 ltrs., 1500 W remains ON for 2 hrs per day, units consumed for 6 months will be [a]

(a) 540 (b) 480 (c) 620 (d) 700

89 One 60 w lamp and 2 fans works for 10 hrs per day, units consumed per day will be [a]

(a) 1.8 (b) 2.1 (c) 1.7 (d) 3

90 A 10 hp pump works for 10 hrs per day, monthly consumption will be [d]

(a) 223.8 (b) 2.23 (c) 22.38 **(d) 2238**

91 A grinders in a factory, equipped with 1.5 hp motor, works for 6 hrs per day, the units consumed per day will be [b]

(a) 5.490 **(b) 6.714** (c) 2388 (d) 1940

92 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 [b]

(a) 0.5 W **(b) 1 W** (c) 5 W (d) 50 W

93 The resistance of human body lies between (dry condition) [d]

(a) 100-200 ohm (b) 5 K ohm-50 K ohm
(c) 1 M ohm-10 M ohm **(d) 100 k ohm-500 K ohm**

94 Instrument used to measure electric energy consumption is [c]

(a) Galvanometer (b) Potentiometer
(c) Energy meter (d) None of the above

95 Which of the following keeps the poles straight [a]

(a) Stay rod (b) Cross arm
(c) Conductor (d) Insulator

96 Inside the geyser there is a [b]

(a) Filament **(b) Immersion rod** (c) Any of a & b (d) None of the above

97 Which of the following is used for concealed wiring in a house [a]

(a) PVC conduit (b) GI pipe (c) Spun concrete pipe (d) Any of the above.

98 The size of copper wire used for point wiring in sq mm is [a]

(a) 1.5 (b) 2.5 (c) 4 (d) 10

99 The size of copper wire used for sub main in sq mm is [b]

(a) 1.5 **(b) 2.5** (c) 4 (d) 10

100 The size of Aluminium wire used for point wiring in sq mm is [c]

(a) 1.5 (b) 2.5 **(c) 4** (d) 10

101 The combined Earth resistance of 33kV/11 kV receiving station should not exceed [a]

(a) 1 ohm (b) 2 ohms (c) 10 ohms (d) 20 ohms

102 The combined earth resistance of 11 kV/415 V Sub-station should not exceed [b]

(a) 0.5 Ω **(b) 2 Ω**
(c) 10 Ω (d) 20 Ω

103 The integration time employed by supply authorities for recording M.D. for a 33 kV/415 V, 10 MVA Sub-station is – [b]
(a) 5 minutes **(b) 15 minutes**
(c) 45 minutes (d) 60 minutes

104 While designing a sub-station anticipated future loads in the next … years are taken [d]
(a) 1 year (b) 2 years
(c) 20 years **(d) 5-7 years**

105 As per the present Tariff the minimum power factor of sub-station should be [d]
(a) 0.8 (b) 0.85
(c) 0.90 (d)0.95

106 The minimum clearance of lowest conductor from the ground of 33 kV lines, across the road. [c]
(a) 3 M (b) 4 M
(c) 6.1 M (d) 14 M

107 The minimum clearance of lowest conductor from the ground of 33 kV lines, along a street. [a]
(a) **5.8 M** (b) 3.0 M (c) 4.0 M (d) 14 M

108. The minimum vertical clearance from 11 kV line to any part of building. [c]
(a) 2.0 M (b) 10.M **(c) 3.7 M** (d) 6.0 M

109. The minimum Horizontal clearance of 11 kV lines from any buildings. [b]
(a) 1.2 M **(b) 3.7 M** (c) 6.1 M (d) 10 M

110. The Visible, Audible, Partial discharge at the surface of conductor at high voltage is called – [b]
(a) Skin affect **(b) Corona** (c) Creep (d) None of these

111. For maintaining power supply qualitythe frequency variation of power supply are restricted to [b]
(a) ± 1 % **(b) ± 3 %** (c) ± 0.5% (d) ± 10%

112. The 3 phase voltage unbalance in supply should not exceed [a]
(a) 2.5.% to 5% (b) 20% (c) 25% (d) 10%

113. For maintaining power supply quality the rate of change of frequency should not exceed. [c]
(a) 5 Hz (b) 10 HZ **(c) ±1 HZ** (d) 3 Hz

114. In Thermal Power plants the generator used are [b]
(a) AC 3 Ø, Induction Generators.
(b) **AC 3 Ø, Synchronous Generators.**
(c) D.C. Shunt Generators.
(d) AC 1 Ø Synchronous Generators.

115. The highest system voltage of normal 33 kV System for the purpose of design of equipments is [b]
(a) 30 kV. **(b) 36 kV.** (c) 33 kV. (d) 66 kV.

116. The Rod gap on the L.V.side of 11 kV/415, 250 kVA Transformer is [d]
(a) 300 mm. (b) 100 mm.
(c) 50 mm. **(d) Rod gap L.A. is not provided for LV side of Transformer.**

117. The rated voltage of L.A. for 11 kV/415V Transformer Protection is [c]
(a) 11 kV. (b) 12 kV.
(c) 9 kV. (d) 24 kV.

118. For medium sized 11 kV/415 v, 500 kVA Transformer sub-station, the type of L.A. used are [b]
(a) Station type. **(b) Line type.**
(c) Distribution type. (d) None of these.

119. The line type L.A. used for our 11 kV and 33 kV Sub-station are having a standard normal discharge current (Peak). [a]
(a) 5 KA. (b) 10 KA.
(c) 1.5 KA. (d) 2.5 KA.

120. The span of supports for 11 kV over head lines should not exceed. [b]
(a) 100 m. (b) 65 m.
(c) 30 m. (d) 27 m.

121. The testing of relays should be performed at a interval of [b]
(a) 6 months **(b) 12 months**(c) 18 months (d) 24 months

122. If any live conductor in the circuit is entangled with tree branch _____ operates. [a]
(a) EFR (b) OVR
(c) OLR (d) Thermal relay

123. _____ relay operates if there is a heavy increase in load current. [c]
(a) EFR (b) OVR
(c) OLR (d) Thermal relay

124. _____ relay indicates the temperature rise of a transformer. [d]
(a) EFR (b) OVR
(c) OLR **(d) OTI&WTI**

125. If the relay setting of 60/5 CT is at 3.75, then the tripping will be at [b]
(a) 60 Amp. **(b) 45 Amp.** (c) 30 Amp. (d) 50 Amp

126. The normal SPG of electrolyte of lead acid battery should be [c]
(a) 1.160 (b) 1.180 **(c) 1.220** (d) 1.240

127. The terminal voltage of a fully charged lead acid cell is [c]
(a) 1.8 V (b) 2.0 V **(c) 2.2 V** (d) 2.4 V

128. The terminal voltage of a lead acid cell should not fall below [b]
(a) 1.6 V **(b) 1.8 V** (c) 2.0 V (d) 2.2 V

129. The normal charging rate of 120 AH lead acid battery set is [c]
(a) 4 A (b) 8 A **(c) 12 A** (d) 16 A

130. The ratio of distil water and acid used to prepare new electrolyte for lead acid cell is [d]
(a) 1 : 1 (b) 2 : 1 (c) 3 : 1 **(d) 4 : 1**

131. Following law is applicable in the working of lead acid cell [c]
(a) Faradays law of self induction.
(b) Faradays law of mutual induction
(c) Faradays law of electrolysis.
(d)Newton's law of motion.

132. The capacity of storage battery is expressed as [d]
(a) No. of recharges it can take
(b) Time for which it can be used
(c) No. of cells it contain
(d) **Ampere hour it can deliver.**

133. Sedimentation in lead acid cell occurs due to [a]
(a) Overcharging at high rate.
(b) Slow charging at low rate.
(c) Over discharge at low rate.
(d) Non-utilization for long periods.

134. Even when not in use, a flooded typelead acid battery should be recharged once in [a]
(a) Six week (b) Six days
(c) Three months (d) Six months.

135. First step to be carried out before starting work starting work on faulty portion of overhead line is to [b]
(a) Earth the line on both the ends of the portion (b)**Obtain the permit to work**
(c)Bring ladder or crane (d) Climb on the pole immediately

136. Before starting the work on faulty circuit it should be ensured that [a]
(a)The faulty portion has been isolated from the power supply
(b)The worker is strong enough to climb the pole
(c) The cable is not deep enough to dig
(d) None of the above.

137. The electric overhead line on which work is to be carried out should be necessarily earthed on both the ends to [c]
(a) Dispense the charge stored between the conductors due to capacitive effect
(b) To bring the line at zero potential
(c) **Both a & b**
(d) None of the above

138. One can protect himself from electric shock while working on live circuit by wearing gloves of good [b]
(a) Conducting material
(b) **Insulating material**
(c) Semiconductor material
(d) Any of the above.

139. Which of the following are principlesafety precautions [d]
(a) Don't touch live wire or equipment with bare hands
(b) Before switching on supplyseeno one is working in the line
(c) Use rubber gloves and helmet
(d) All of the above.

140. Which of the following is most effective method of artificial respiration [a]
(a) **Mouth to mouth air pumping method**
(b) To use bicycle air pump
(c) Both a & b
(d) None of the above

141. Which material is recommended as fire extinguisher in electrical cases [b]
(a) Carbon tetra chloride
(b) **Carbon dioxide**
(c) Sulphur hexafluoride
(d) Any of the above

142. Which of the following is to be necessarily kept in a electric substation [d]
(a) First aid box
(b) Stretcher
(c) Earthing rod
(d) **All of the above**

143. The warning board to be provided, on the switch of the line on which work is going on [a]
(a) **Men at working**
(b) Danger
(c) Keep away
(d) None of the above

144. Staff competent to work on overhead line of MV should be [c]
(a) Unskilled
(b) Semi skilled
(c) **Highly skilled**
(d) Any of the above

145. Which of the following is a renewable source of energy? [d]
a) coal b) oil c) Natural gas **d) Solar**

146. The law of conservation of energy states that energy [d]
a) can be created and destroyed
b) is destroyed in the process of burning
c) cannot be converted from one
d) **is neither destroyed nor created; But can be transform from oneformto another form**

147. Absolute pressure is [c]
a) Gauge Pressure
b) Atmospheric Pressure
c) **Gauge pressure + Atmospheric Pressure**
d) Gauge Pressure – Atmospheric Pressure

148. 100 kCals expressed as kilojoules would be [a]
a) 418.7 kJ b) 4.187 Joules c) 4.187 kJ d) 41.87 kJ

149. When heat flows from one place to another by means of a liquid or gas, it is being transferred by [d]
a) radiation b) conduction
c) sublimation **d) convection**

150. How many watts are in a hp? [d]
a) 700 b) 725 c) 740 **d) 746**

151. The characteristic of an electrical circuit that forces current to flow is [d]
a) watts b) amps c) ohms **d) volts**

152. Voltage and resistance in an electrical circuit are related by Ohm's law and determine [d]
a) resistance b) voltage c) the type of circuit **d) current**

153. The characteristic of an electrical circuit that opposes current flow is [a]
a) resistance b) voltage c) friction d) power

154. The instrument used to measure RPM is [d]
a) Fyrite b) Pyrometer
c) Ultrasonic flow meter **d) Stroboscope**

155. Which of the following terms does not refer to specific energy consumption [d]
a) Kwh/ton b) kcal/kLc) kJ/kg **d) kg**

156. Which of the following will not motivate the employees for energy conservation ? [d]
a) Incentive b) Recognition c) Reward **d) Threatening**

157. The heat input required for generating 'one' kilo watt-hour of electrical output is called as ___. [b]
a) Efficiency **b) Heat Rate** c) Calorific Value d) Heat value

158. Which of the voltage is not available for Indian distribution system? [c]
a) 33 kV b) 11 kV **c) 280 V** d) 433 V

159. The power loss in transmission/distribution line depends on ____. [d]
a) Current in the line b) Resistance of the line c) Length of the line **d) All**

160. If distribution of power is raised from 11 kV to 66 kV, the voltage drop would lower by [b]
a) 6 times **b) 1/6 times** c) 36 times d) 1/36 times

161. If the distribution voltage is raised from 11 kV to 33 kV, the line loss would be: [a]
a) Less by 1/9 b) More by 9 times c) No change d) None of the above

162. The maximum demand of an industry, if trivector motor records 3600 KVA for 15 minutes and 3000 kVA for next 15 minutes over a recording cycle of 30 min is_____. [c]
a) 3600 kVA b) 3000 kVA **c) 3300 kVA** d) 600 kVA

163. Presenting the load demand of a consumer against time of the day is known as___. [b]
a) Time Curve **b) Load curve** c) Demand curve d) Energy curve

164. The vector sum of active power and reactive power required is ____. [a]
a) Apparent Power b) Power Factor c) Load Factor d) Maximum Demand

165. Power factor is the ratio of ____ and apparent power. [a]
a) Active power b) Reactive power c) Load Factor d) Maximum Demand

166. The kVAr rating required for improving the power factor of a load operating at 500 kW and 0.85 power factor to 0.95 is _____. [a]
a) 145 kVAr b) 500 kVAr c) 50 kVAr d) 100 kVAr

167. The rating of the capacitor at motor terminals should not be greater than _____ . [b]
a) magnetizing kVAr of the motor at full load
b) **magnetizing kVAr of the motor at no load**
c) magnetizing kVAr of the motor at half load
d) magnetizing kVAr of the motor at 75% load

168. The percentage reduction in distribution loses when tail end power factor raised from 0.8 to 0.95 is _____. [a]
a) 29% b) 15.8% c) 71% d) 84%

169. If voltage applied to a 415 V rated capacitors drops by 10%, its VAR output drops by ____. [c]
a) 23% b) 87% **c) 19%** d) 10%

170. The ratio between the number of turns on the primary to the turns on the secondary of a transformer is know as: [a]
a) turns ratio b) efficiency c) **winding factor** d) power factor

171. The ratio of overall maximum demand of the plant to the sum of individual maximum demand of various equipments is _____. [b]
a) load factor **b) diversity Factor** c) demand Factor d) maximum demand

172. Core losses in transformer are caused by _____. [c]

a) Hysteresis loss b) Eddy current loss **c) both a & b** d) None

173. The load losses in transformer vary according to _____. [b]

a) Loading of transformer **b) Square of loading of transformer**

c) Cube of loading of transformer d) None

174. The total losses in a transformer operating at 50% load with designed no load and load losses at 2 kW and 20 kW respectively are _____. [a]

a) 7 kW b) 12 kW c) 4.5 kW d) 22 kW

175. The total amount of harmonics present in the system is expressed using ___. [c]

a) Total Harmonic Factor b) Total Harmonic Ratio

c) Total Harmonic Distortiond) Crest Factor

176. The 5th and 7th harmonic in a 50 Hz power environment will have: [c]

a) voltage and current distortions with 55 Hz & 57 Hz

b) voltage and current distortions with 500 Hz & 700 Hz

c) **voltage and current distortions with 250 Hz & 350 Hz**

d) no voltage and current distortion at all

177. The type of energy possessed by the charged capacitor is [b]

a) Kinetic energy **b) Electrostatic** c) Potential d) Magnetic

178. The energy stored in the bonds of atoms and molecules is called [b]

a) Kinetic energy **b) Chemical energy**

c) Potential energy d) Magnetic energy

179. Active power consumption of motive drives can be determined by using one of the following relations. [d]

a) $\sqrt{3} \times V \times I$ b) $\sqrt{3} \times V^2 \times I \times \cos\phi$

c) $\sqrt{3} \times V \times I^2 \times \cos\phi$ **d) $\sqrt{3} \times V \times I \times \cos\phi$**

180. The grade of energy can be classified as low, high, extra ordinary. In case of electrical energy it would fall under ____ category. **(EM/EA)** [c]

a) low grade b) extra ordinary grade

c) high grade d) none of the above

181. The portion of apparent power that doesn't do any work is termed as [c]

a) Apparent power b) Active power

c) Reactive Power d) None of the above

182. Power factor (PF) is the ratio of **(EM/EA)** **[c]**

a) Apparent power & Active power b) Active power & Reactive power

c) Active Power & Apparent power d) Apparent power & Reactive power

183. kVA is also called as [b]

a) reactive power **b) apparent power** c) active power d) captive power

184. The energy consumed by a 50 kW motor loaded at 40 kW over a period of 4 hours is[b]

a. 50 kWh **b) 160 kWh** c) 40 kWh d) 2000 kWh

185. The ratio of maximum demand to the connected load is termed as [b]

a) Load factor **b) Demand factor**

c) Contract demand d) none of the above

186. A single phase induction motor is drawing 10 amps at 230 volts. If the operating power factor of the motor is 0.9, then the power drawn by the motor is [c]

a) 2.3 kW b) 3.58 kW **c) 2.07 kW** d) 2.70 kW

187. The quantity of heat required to raise the temperature of 1 gram of water by 1 ^{O}C is termed as [c]

a) Specific heat b) Heat capacity **c) One Calorie** d) Sensible heat

188. Nameplate kW or HP rating of a motor indicates [b]

a) input kW to the motor **b) output kW of the motor**

c) minimum input kW to the motor d) maximum input kW to the motor

189. The quantity of heat required to change 1 kg of the substance from liquid to vapor state without change of temperature is termed as [b]

a) Latent heat of fusion **b) Latent heat of vaporization**

c) Heat capacity d) Sensible heat

190. The latent heat of condensation of 1 kg of steam at 100 °C to form water at 100 °C, it gives out the heat of [b]

a) 580 kCal **b) 540 kCal** c) 620 kCal d) 2260 kCal

191. The specific heat of ____ is very high compared to other common substances

listed below [c].

a) Lead b) Mercury **c) Water** d) Alcohol

192. The property of viscosity of liquid fuels: [c]

a) decreases with decreasing temperature

b) increases with increasing temperature

c) **decreases with increasing temperature**

d) increases with decreasing temperature

193. The quantity of heat Q, supplied to a substance to increase its temperature depends upon the following. [c]

a) sensible heat added b) latent heat of fusion

c) specific heat of the substance d) heat capacity

194. Unit of specific heat in SI system is_____. [a]

a) **joule /kg °C** b) kg/cm^2 c) kcal/m^3 d) kcal/cm^2

195. The change by which any substance is converted from a gaseous state to liquid state is termed as ----- [a]

a) **condensation** b) Evaporation c) Fusion d) Phase change

196. The method of producing power by utilizing steam generated for process in the boiler is termed as ----- [b]

a) Extraction **b) Cogeneration** c) Both a & b d) Neither a nor b

2. TRANSFORMERS

1. The BDV of transformer oil should be [b]
   (a) 20 kV **(b) 30 kV**
   (c) 40 kV (d) 50 kV

2. The colour of moisten silica gel is [a]
   (a) **Pink** (b) Blue
   (c) Yellow (d) Green

3. The material filled in breather of transformer is [a]
   (a) **Silica gel** (b) Sulphuric acid
   (c) SF6 (d) Mineral oil

4. The protective device to indicate the internal fault in a transformer is [b]
   (a) Thermal relay **(b) Buchholz relay**
   (c) OVR (d) EFR

5. The minimum allowable BDV for transformer oil should stand for [d]
   (a) 15 sec (b) 30 sec
   (c) 45 sec **(d) 60 sec**

6. While testing transformer oil the gap between electrodes is kept at a distance of [d]
   (a) 1 mm (b) 2 mm
   (c) 3 mm **(d) 4 mm**

7 Core of a transformer is made up of [d]
   (a) Aluminium (b) Carbon
   (c) Lead **(d) Silicon steel**.

8 Which of the following is not the function of a transformer oil [d]
   (a) Cooling of primary Coils
   (b) Cooling of secondary coils.
   (c) Providing additional insulation.
   (d) **Providing inductive coupling.**

9 For a transformer, the condition for maximum efficiency is [c]
   (a) Hysteresis loss = eddy current loss
   (b) Core loss = hysteresis loss
   (c) **Copper loss = Iron loss**
   (d) Total loss = 2/3 copper loss.

10 Transformer oil shall be free from [d]

(a) Odour (b) Gases (c) Temperature **(d) Moisture.**

11 The power factor in a transformer [d]

(a) Is always unity

(b) Is always leading

(c) Is always lagging

(d) **Depends on power factor of load.**

12 The short circuit test of a transformer gives [a]

(a) **Copper loss at full load**

(b) Copper loss at half load

(c) Iron loss at any load

(d) Sum of iron loss and copper load.

13 The open circuit test of transformer determines [a]

(a) **Iron loss**

(b) Copper loss at full load

(c)Copper loss at half load

(d) Total losses.

14 The type of oil, which is suitable as transformer oil is [c]

(a) Crude oil (b) Organic oil

(c) Mineral oil (d) Animal oil.

15 A step up transformer increases [c]

(a) Power (b) Current

(c) Voltage (d) Frequency.

16 Which test is conducted on all transformers in a manufacturing concern [a]

(a) Routine test (b) Type test

(c) Special test (d) All above

17 The colour of fresh dielectric oil for a transformer [d]

(a) Pale yellow (b) Dark brown

(c) White to grey **(d) Colourless**

18 The ratio of kW to kVA is known as [b]

(a) Voltage regulation **(b) power factor**

(c) Transformation ratio (d) None above

19 Core lifting of a transformer is done after a period of [c]

(a) 3 yrs. (b) 4 yrs.

(c) 5 yrs. (d) 6 yrs.

20 The purpose of conservator tank in a transformer is to [c]

(a) Monitor the oil level (b) Top up the oil level

(c) Both a & b above (d) None of the above.

21 Transformers placed in a room enclosed from all the four sides, the minimum spacing between the walls and the transformer should be [d]

(a) 0.5 m (b) 0.75 m (c) 1 m **(d) 1.25 m**

22 For indoor installation the minimum clearance between the highest point of the conservator tank to the ceiling of the transformer room should be [b]

(a)0.25 m **(b) 0.5 m**

(c) 0.75 m (d) 1 m

23 At an atmospheric temperature of 45° C and keeping in view the working condition, the winding temperature of the transformer should not exceed [b]

(a) 80 ° C **(b) 95 ° C**

(c) 110 °C (d) 130 ° C

24. Which of the following does not change in a transformer? [c]

a. Current b. Voltage

c. Frequencyd. All of the above

25. In a transformer the energy is conveyed from primary to secondary [c]

a. through cooling coil b. through air

c. by the fluxd. none of the above

26. A transformer core is laminated to [b]

a. reduce hysteresis loss **b. reduce eddy current losses**

c. reduce copper losses d. reduce all above losses

27. The path of a magnetic flux in a transformer should have [d]

a. high resistance b. high reluctance

c. low resistance **d. low reluctance**

28. No-load test on a transformer is carried out to determine [c]

a. copper loss b. magnetizing current

c. magnetizing current and loss d. efficiency of the transformer

29. The dielectric strength of transformer oil is expected to be [b]

a. 1 kV **b. 33 kV** c. 100 kV d. 330 kV

30. The efficiency of a transformer will be maximum when [d]
a. copper losses = hysteresis losses
b. hysteresis losses = eddy current losses
c. eddy current losses = copper losses
d. copper losses = iron losses

31. No-load current in a transformer [a]
a. **lags behind the voltage by about 75°** b. leads the voltage by about 75°
c. lags behind the voltage by about 15° d. leads the voltage by about 15°

32. The purpose of providing an iron core in a transformer is to [c]
a. provide support to windings b. reduce hysteresis loss
c.decrease the reluctance of the magnetic path d. reduce eddy current losses

33. Which of the following is not a part of transformer installation? [d]
a. Conservator b. Breather c. Buchholz relay **d. Exciter**

34. While conducting short circuit test on a transformer the following side is Shortcircuited [b]
a. High voltage side **b. Low voltage side**
c. Primary side d. Secondary side

35. In the transformer following winding has got more cross-section area [a]
a. **low voltage winding** b. High voltage winding
c. primary winding d. secondary winding

36. A transformer transforms [c]
a. voltage b.current **c. Power**d. frequency

37. A transformer cannot raise or lower the voltage of a D.C. supply because [c]
a. there is no need to change the D.C. voltage
b.a D.C. circuit has more losses
c. Faraday's laws of electromagnetic induction are not valid since the rate of change of flux is zero
d. none of the above

38. Primary winding of a transformer [c]
a. is always a low voltage winding b. is always a high voltage winding
c. could either be a low or high voltaged. none of the above winding

39. Which winding in a transformer has more number of turns? [b]
a. Low voltage winding **b. High voltage winding**
c. Primary winding d. Secondary winding

40. Efficiency of a power transformer is of the order of [b]
a. 100 percent **b. 98 percent**
c. 50 percent d. 25 percent

41. In a transformer routine efficiency depends upon [c]
a.natural air cooling b. air blast cooling
c. oil cooling d. any of the above

42. In a transformer routine efficiency depends upon [d]
a. supply frequency b. load current
c. power factor of load **d. both (b) and (c)**

43. The maximum efficiency of a distribution transformer is (all day efficiency) [b]
a. at no load b. **at 50% full load**
c. at 80% full load d. at full load

44. Transformer breaths in when [b]
a. load on it increases **b. load on it decreases**
c. load remains constant d. none of the above

45. No-load current of a transformer has [d]
a. has high magnitude and low power factor
b. has high magnitude and high power factor
c. has small magnitude and high power factor
d. has small magnitude and low power factor

46. Spacers are provided between adjacent coils [a]
a. to provide free passage to the cooling oil
b. to insulate the coils from each other
c. both (a) and (b) d. none of the above

47. In a transformer the tappings are generally provided on [d]
a. primary side b. secondary side
c. low voltage side **d. high voltage side**

48. The chemical used in breather for transformer should have the quality of [b]
a. ionizing air **b. absorbing moisture**
c. cleaning the transformer oil d. cooling the transformer oil

49. The chemical used in breather is [d]
a. asbestos fibre b. silica sand
c. sodium chloride **d. silica gel**

50. The transformer ratings are usually expressed in terms of [d]
a. Volts b. amperes
c. kW **d. kVA**

51. Material used for construction of transformer core is usually [d]
a. Wood b. copper
c. Aluminium **d. silicon steel**

52. The thickness of lamination used in a transformer is usually [a]
a. 0.4mm to 0.5 mm b. 4 mm to 5 mm
c. 14mm to 15mm d. 25mm to 40 mm

53. The function of conservator in a transformer is [d]
a. to protect against internal fault
b. to reduce copper as well as core losses
c. to cool the transformer oil
d. to take care of the expansion and contraction of transformer oil due to variation oftemperature of surroundings

54. A Buchholz relay can be installed on [d]
a. auto-transformers b. air-cooled transformers
c. welding transformers **d. oil cooled transformers**

55. Buchholz's relay gives warning and protection against [a]
a. **electrical fault inside thetransformeritself**
b. electrical fault outside the transformerin outgoing feeder
c. for both outside and inside faults
d. none of the above

56. The transformer laminations are insulated from each other by [b]
a. mica strip **b. thin coat of varnish**
c. paper d. any of the above

57. During open circuit test of a transformer [a]
a. **primary is supplied rated voltage**
b. primary is supplied full-load current
c. primary is supplied current at reduced voltage
d. primary is supplied rated kVA

58. Open circuit test on transformers is conducted to determine [c]
a. hysteresis losses b. copper losses
c. core losses. d. eddy current losses

59. Short circuit test on transformers is conducted to determine [b]
a. hysteresis losses **b. copper losses**
c. core losses d. eddy current losses

60. The function of breather in a transformer is [d]
a. to provide oxygen inside reduced load
b. to cool the coils during reduced load
c. to cool the transformer oil
d. to arrest flow of moisture when outside air enters the transformer

61. The secondary winding of which of the following transformers is always kept closed? [d]
a. Step-up transformer b. Step-down transformer
c. Potential transformer **d. Current transformer**

62. For a transformer, operating at constant load current, maximum efficiency will occur at [d]
   a. 0.8 leading power factor b. 0.8 lagging power factor
   c. zero power factor **d. unity power factor**

63. Which of the following protection is normally not provided on small distribution transformers? [b]
   a. Over-fluxing protection **b. Buchholz relay**
   c. Over-current protection d. All of the above

64. Which of the following acts as a protection against high voltage surges due to lightning and switching? [a]
   a. Horn gaps b. Thermal overload relays
   c. Breather d. Conservator

65. Which of the following parts of a transformer is visible from outside? [a]
   a. Bushings b. Core
   c. Primary winding d. Secondary winding

66. The noise produced by a transformer is termed as [b]
   a. zoom **b. hum**
   c. Ringing d. buzz

67. Which of the following loss in a transformer is zero even at full load? [b]
   a. core loss **b. friction loss**
   c. eddy current loss d. hysteresis loss

68. If a transformer is continuously operated the maximum temperature rise will occur in [b]
   a. Core **b. windings**
   c. Tank d. any of the above

69. An open-circuit test on a transformer is conducted primarily to measure [c]
   a. Insulation Resistance b. Copper loss
   c. Core loss d. Total loss

70. A no-load test is performed on a transformer to determine [d]
   a. Core loss b. Copper loss
   c. Efficiency **d. Magnetising current and loss**

3. EARTHING

1. The code of practice for earthing is governed by [a]
   (a) **IS: 3043** (b) IS: 4340 (c) IS: 4340 (d) IS: 4430

2. The length of pipe electrode used for earthing should not be less than [b]
   (a) 3.5 m **(b) 2.5 m** (c) 4.5 m (d) 5 m

3. As per IS, the earthing electrode shall not be within a distance of _____ mtrs from any building being earthed. [c]
   (a) 0.5 m (b) 1 m **(c) 1.5 m** (d) 2 m

4. Maximum permissible earth resistance at large power stations is [a]
   (a) **0.5 Ω** (b) 1 Ω (c) 2 Ω (d) 8 Ω

5. Maximum permissible earth resistance at major Sub-stations is [b]
   (a) 0.5 ohm **(b) 1 ohm** (c) 2 ohms (d) 8 ohms

6. Maximum permissible earth resistance at small Sub-stations is [c]
   (a) 0.5 ohm (b) 1 ohm **(c) 2 ohms** (d) 8 ohms

7. Maximum permissible earth resistance for buildings is [d]
   (a) 0.5 ohm (b) 1 ohm (c) 2 ohms **(d) 8 ohms**

8. Earth continuity inside an installation i.e. from plate earth to any point in installation should be [b]
   (a) 0.5 ohm **(b) 1 ohm** (c) 2 ohms (d) 8 ohms

9 The plate electrode of copper used for earthing should be with minimum size of [c]
   (a) 50cm x 50cm x 3.15mm (b) 50cm x 50cm x 6.3mm
   (c) 60cm x 60cm x 3.15mm (d) 60cm x 60cm x 6.3mm

10 The plate electrode of GI or steel used for earthing should be with minimum size of [d]
   (a) 50cm x 50cm x 3.15mm (b) 50cm x 50cm x 6.3mm
   (c) 60cm x 60cm x 3.15mm **(d) 60cm x 60cm x 6.3mm**

11 In pipe earthing, the minimum internal diameter for GI pipe should be [b]
   (a) 30 mm **(b) 40 mm** (c) 50 mm (d) 60 mm

12 In pipe earthing, the minimum internal diameter for cast iron pipe should be [c]
   (a) 80 mm (b) 90 mm **(c) 100 mm** (d) 60 mm

13 Copper strip electrodes used for earthing should not be less than [c]

(a) 22.5 mm x 1.60 mm (b) 20 mm x 2.5 mm

(c) **25 x 1.60 mm** (d) 25 mm x 2.5 mm

14 GI or Steel strip electrodes used for earthing should not be less than [a]

(a) **25 mm x 4mm** (b) 20 mm x 3 mm

(c) 25mm x 3mm (d) 20mm x 4mm

15 Earthing arrangement for HT installations, substations and generating stations should be inspected at an interval of [d]

(a) 3 months (b) 6 months (c) 9 months **(d) 12 months**

16 Earthing arrangement for low voltage installations such as service buildings, public buildings should be inspected at an interval of [b]

(a) 3 months **(b) 6 months** (c) 9 months (d) 12 months

17 Earthing arrangement for residential buildings should be inspected at an interval of [b]

(a) 3 months **(b) 6 months** (c) 9 months (d) 12 months

18 Earthing arrangement for medium voltage installations should be inspected at an interval of [d]

(a) 3 months (b) 6 months (c) 9 months **(d) 12 months**

4. LIGHTING & ILLUMINATION

1. The illumination level at A class stations should be [d]
   (a) 20 lux (b) 30 lux (c) 40 lux **(d) 50 lux**

2. The illumination level at B class stations should be [b]
   (a) 20 lux **(b) 30 lux** (c) 40 lux (d) 50 lux

3. The illumination level at C class stations should be [a]
   (a) **20 lux** (b) 30 lux (c) 40 lux (d) 50 lux

4. Recommended no. of light points in type I (DR) quarter is [b]
   (a) 5 **(b) 6** (c) 7 (d) 8

5 Recommended no. of light points in type II quarter is [b]
   (a) 5 **(b) 6** (c) 7 (d) 8

6 Recommended no. of light points in type III quarter is [d]
   (a) 5 (b) 6 (c) 7 **(d) 8**

7 Recommended no. of light points in type IV quarter is [c]
   (a) 8 (b) 9 **(c) 10** (d) 11

8 Recommended no. of light points in type IV spl. quarter is [c]
   (a) 11 (b) 12 **(c) 13** (d) 14

9 Recommended no. of fan points in type I quarter is [a]
   (a) **2** (b) 3 (c) 4 (d) 5

10 Recommended no. of fan points in type II quarter is [a]
   (a) **2** (b) 3 (c) 4 (d) 5

11 Recommended no. of fan points in type III quarter is [b]
   (a) 2 **(b) 3** (c) 4 (d) 5

12 Recommended no. of fan points in type IV quarter is [c]
   (a) 2 (b) 3 **(c) 4** (d) 5

13 Recommended no. of fan points in type IV spl. quarter is [d]

(a) 2 (b) 3 (c) 4 **(d) 5**

14 Recommended connected load for type I (DR) quarter is [a]

(a) **1.36 kW** (b) 3.48 kW (c) 4.17 kW (d) 6.85 kW

15 Recommended connected load for type II quarter is [b]

(a) 1.36 kW **(b) 3.48 kW** (c) 4.17 kW (d) 6.85 kW

16 Recommended connected load for type III quarter is [c]

(a) 1.36 kW (b) 3.48 kW **(c) 4.17 kW** (d) 6.85 kW

17 Recommended connected load for type IV quarter is [d]

(a) 1.36 kW (b) 3.48 kW (c) 4.17 kW **(d) 6.85 kW**

18 Recommended connected load for type IV spl. quarter is [c]

(a) 4.17 kW (b) 6.85 kW **(c) 8.6 kW** (d) 11.85 kW

19 Recommended connected load for type V quarter is [d]

(a)4.17 kW (b) 6.85 kW (c) 8.6 kW **(d) 11.85 kW**

20. Luminous efficiency of a fluorescent tube is [d]

a. 10 lumens/ watt b.20 lumens/ watt

c. 40 lumens/ watt **d. 60 lumens/ watt**

21. Candela is the unit of which of the following? [b]

a. wavelength **b. luminous intensity**

c. luminous flux d. frequency

22. Colour of light depends upon [c]

a. frequency b. wave length

c. both (a) and (b) d. speed of light

23. Illumination of one lumen per sq. metre is called …… [b]

a. lumen metre **b. lux**

c. foot candle d. candela

24. The unit of luminous flux is …… [b]

a. watt/ m^2 **b. lumen**

c. lumen/ m^2d. watt

25. Filament lamps operate normally at a power factor of [c]

a. 0.5 lagging b. 0.8 lagging

c. unity d. 0.8 leading

26. What percentage of the input energy is radiated by filament lamps? [a]
a. **2 to 5 percent** b. 10 to 15 percent
c. 25 to 30 percent d. 40 to 50 percent

27. The filament of a GLS lamp is made of [a]
a. **tungsten** b. copper
c. carbon d. aluminium

28. Which of the following lamps is the cheapest for the same wattage? [c]
a. Fluorescent tube b. mercury vapour lamp
c. GLS lamp d. sodium vapour lamp

29. Which of the following is not the standard rating of GLS lamps? [b]
a. 100 W **b. 75 W**
c. 40 W d. 15 W

30. The colour of sodium vapour discharge lamp is [c]
a. red b. pink
c. yellow d. bluish green

31. A reflector is provided to [d]
a. protect the lamp b. provide better illumination
c. avoid glare **d. do all of the above**

32. The purpose of coating the fluorescent tube from inside with white powder is [d]
a. to improve its life
b. to improve the appearance
c. to change the colour of light emitted to white
d. to increase the light radiations due to secondary emissions

33. In the fluorescent tube circuit the function of choke is primarily to [c]
a. reduce the flicker b. minimize the starting surge
c. initiate the arc and stabilize it d. reduce the starting current

34. The function of capacitor across the supply to the fluorescent tube is primarily to [c]
a. stabilize the arc b. reduce the starting current
c. improve the supply power factor d. reduce the noise

35. Most affected parameter of a filament lamp due to voltage change is [b]
a. wattage **b. life**
c. luminous efficiency d. light output

36. In electric discharge lamps for stabilizing the arc [c]
a. a reactive choke is connected in series with the supply
b. a condenser is connected in series to the supply
c. a condenser is connected in parallel to the supply
d. a variable resistor is connected in the circuit

37. For precision work the illumination level required is of the order of [a]
a. **500 – 1000 lumens/m^2** b. 200 – 400 lumens/m^2
c. 50 – 100 lumens/ m^2 d. 10 – 25 lumens/ m^2

38. For normal reading the illumination level required is around [b]
a. 20 – 40 lumens/ m^2 **b. 60 – 100 lumens/ m^2**
c. 200 – 300 lumens/ m^2 d. 400 – 500 lumens/ m^2

39. In electric discharge lamps light is produced by [b]
a. cathode ray emission **b. ionization in a gas or vapour**
c. heating effect of current d. magnetic effect of current

40. A substance which change its electrical resistance when illuminated by light is called [c]
a. photoelectric b. photovoltaic
c. photoconductive d. none of the above

41. In case of … power factor is the highest. [a]
a. **GLS lamps** b. mercury arc lamps
c. tube lights d. sodium vapour lamps

42. A mercury vapour lamp gives … light. [d]
a. white b. pink
c. yellow **d. greenish blue**

43. Sometimes the wheels of rotating machinery, under the influence of fluorescent lamps appear to be stationary. This is due to the [b]
a. low power factor **b. stroboscopic effect**
c. fluctuations d. luminescence effect

44. The flicker effect of fluorescent lamps is more pronounced at [a]
a. **lower frequencies** b. higher frequencies
c. lower voltages d. higher voltages

45. Which gas can be filled in GLS lamp? [d]
a. oxygen b. carbon di-oxide
c. xenon **d. any inert gas**

46. The gas filled in vacuum filament lamps is [d]
a. nitrogen b. argon
c. air **d. None**

47. The vapour discharge tube used for domestic lighting has [c]
a. no filament b. one filament
c. two filament d. three filament

48. Stroboscopic effect due to use of discharge lamps in workshops results in moving machinery appearing [d]

a. stationary
b. stationary running slow
c. stationary running in reverse direction
d. all of the above

49. Glare is reduced by [d]

a. using diffusers
b. increasing the height of the lamp
c. using reflectors to cut-off the angle
d.allthe abovecertain

50. Which of the following is present inside the fluorescent tube? [c]

a. argon and neon
b. argon and CO_2
c. mercury vapour
d. helium and oxygen

51. When an electric bulb is broken it produces bang; this is due to [a]

a. **vacuum inside the bulb**
b. pressure of air in the bulb
c. pressure inside is equal to that out-
d. none of the above side

5. D.G. SET

1 If a DG set fails to start, the probable cause may be [d]

(a) Dirty clogged air cleaner (b) Fuel tank empty

(c) Nozzle niddle jammed **(d) All of the above**

2 If a DG set starts but stop after some time, the probable cause may be [d]

(a) Air in fuel (b) Fuel line choke

(c) Fuel filter choked **(d) All of the above**

3 If a DG set is not gaining full speed, the probable cause may be [d]

(a) Fuel tank empty (b) Governor spring broken

(c) Fuel filter dirty **(d) All of the above**

4 If a DG set misfire during operation, the probable cause may be [d]

(a) Air in fuel line (b) Nozzle damaged

(c) Water mixed with fuel **(d) All of the above**

5 If a DG set lacks power, the probable cause may be [a]

(a) **Pump may inject insufficient quantity of fuel** (b) Poor quality of fuel

(c) Dirty cooling system (d) All of the above

6 If a DG set gives excessive smoke at no load, the probable cause may be [d]

(a) Dirty clogged air cleaner (b) choked fuel injection hole

(c) Faulty fuel pump **(d) All of the above**

7 If a DG set excessive smoke at full load, the probable cause may be [d]

(a) One or more cylinder not working (b) Poor quality of oil

(c) Nozzle jammed **(d) All of the above**

8 If a DG set gives out blue smoke, the probable cause may be [d]

(a) Worn out liner on piston (b) Wrong graded lubricating oil

(c) Engine used after a long time **(d) All of the above**

9 If a DG set gives white smoke, the probable cause may be [a]

(a) **Water mixed with fuel** (b) Engine used after a long time

(c) Worn out liner piston (d) All of the above

10 If a DG set overheats, the probable cause may be [d]

(a) high exhaust back pressure (b) Engine overloaded

(c) Damaged main or connecting bearings **(d) All of the above**

11 11. If a DG set consumes excessive fuel, the probable cause may be [d]

(a) Injector adjustment disturbed (b) External/internal fuel leakage

(c) Incorrect value of fuel timing **(d) All of the above**

12. If the alternator of DG set is overheats, the probable cause may be [d]

(a) Improper ventilation (b) Misalignment

(c) Overloading of machine **(d) All of the above**

13. If the armature of DG set overheats, the probable cause may be [c]

(b) Overloading (b) Internal short circuit

(c) Both a &b (d) None of the above

13. The maximum rated speed for 125 kVA Cummins make DG set is [a]

a **1500 rpm** (b) 1800 rpm (c) 2100 rpm (d) 2500 rpm

14. The oil temperature gauge of a DG set should normally read between [a]

a **82-116 deg C** (b) 90-125 deg C (c) 100-140 deg (d) 122-148 deg C

15. During warming up, the load should be applied gradually on a DG set until the oil temperature reaches [b]

a 40 ° C **(b) 60 °C** (c) 80 ° C (d) 100 ° C

16. The water temperature of DG set in operation should normally range between [b]

a 60-80 deg C **(b) 74-91 deg C**(d) 88-98 deg C (d) 95-110 deg C

17. The pH value of the coolant in the radiator of a DG set should be maintained between [b]

a 6.5 to 8.5 **(b) 8.5 to 10.5** (c) 10.5 to 12.5 (d) 12.5 to 14.5

18. The diesel engine should not be operated if the pH value in the radiator is less than [b]

a 6.5 **(b) 8.5** (c) 10.5 (d) 12.5

19. Primary filters in the fuel system of the DG set should be cleaned at every [c]

a 150 hrs (b) 200 hrs **(c) 250 hrs** (d) 300 hrs

20. Primary filters in the fuel system of the DG set should be replaced at every [b]

a 500 hrs **(b) 800 hrs** (c) 1000 hrs (d) 1500 hrs

21. The secondary fuel filter of a DG set should be replaced when the fuel pressure gauge is below

a 10 psi **(b) 12 psi** (c) 15 psi (d) 20 psi [b]

22. The exciter in a DG set is [a]

a **Shunt generator** (b) Compound generator

(c) Either of a or b (d) None of the above.

24. The compression ratio in diesel engines is in the range of: [b]

a) 10:1 to 15:1 **b) 14:1 to 25:1** c) 5:1 to 10:1 d) 1:2 to 3:1

25. Which of the following is the last step in diesel engine operation? [d]

a) Induction stoke b) Compression stroke
c) Ignition stroke **d) Exhaust stroke**

26. The power requirement of the DG set is determined by: [b]

a) base load **b) Maximum load** c) Partial load d) Zero load

27. Present specific fuel consumption value of DG sets in industries is about ____. [c]

a) 220 g/kWh b) 100 g/kWh **c) 160 g/kWh** d) 50 g/kWh

28. The efficiency of diesel generating set falls in the region of: [a]

a) **35 – 45%** b) 50 – 60% c) 65 – 70% d) Above 80%

29. Auxiliary power consumption of DG set at full load in its operating capacity is about _ [a]

a) **1 - 2%** b) 5 – 6% c) 10 - 12% d)Above 15%

30. The rating required for a DG set with 500 kW connected load and with diversity factor of 1.5, 80% loading and 0.8 power factor is _____ [a]

a) **520 kVA** b) 600 kVA c) 625 kVA d) 500 kVA

31. The starting current value of DG set should not exceed__% of full load capacity of DG set. [b]

a) 100 **b) 200** c) 150 d) 300

32. The maximum permissible percentage unbalance in phase loads on DG sets is____ [c]

a) 5% b) 15% **c) 10%** d) 1%

33. The permissible percentage overload on DG sets for 1 hour in every 12 hours of operation is____ [c]

a) 5% b) 15% **c) 10%** d) 1%

34. Designed power factor of a DG set is generally at: [b]

a) 1.0 **b) 0.8** c) 0.9 d) 1.1

35. Lower power factor of a DG set demands_____ [b]

a) Lower excitation currents **b) Higher excitation currents**

c) No change in excitation currents d) None of the above

36. Which of the following losses is the least in DG sets: [d]

a) cooling water loss b) exhaust loss

c) frictional loss **d) alternator loss**

37. The waste heat potential for a 1100 kVA set at 800 kW loading and with 480 °C exhaust gas temperature is ____ [a]

a) **4.8 lakh kCal/hr** b) 3.5 lakh kCal/hr c) 3 lakh kCal/hr d) 2 lakh kCal/hr

38. Typical exit flue gas temperature of 5 MW DG set operating above 80% load is of the order of ____. [c]

a) 550 to 560 °C b) 210 to 240 °C **c) 340 to 370 °C** d) 400 to 450 °C

39. The maximum back pressure allowed for DG sets is in the range of____. [b]

a) 100 – 200 mm WC **b) 250 – 300 mm WC(Water Column)**

c) 400 – 500 mm WC d) above 500 mm WC

40. The operating efficiency of DG set also depends on: [d]

a) turbo charger b) Inlet air temperature c) % loading **d) all the above**

41. For a DG set, the copper losses in the alternator are proportional to the: [b]

a) Current delivered by the alternator

b) **Square of the current delivered by the alternator**

c) Square root of the current delivered by the alternator

d) None of the above

42. The jacket cooling water temperature for DG sets should be in the range of _____ [b]

a) 40 – 50°C **b) 30 – 40°C** c) 80 – 90°C d) 45 – 60°C

43. The main precaution to be taken care by the waste heat recovery device manufacture to prevent the problem in DG set during operation is: [b]

a) Temperature raises **b) Back pressure**

c) Over loading of waste heat recovery tubes d) Turbulence of exhaust gases

6. PUMPS

1 If pump delivers no liquid, then probable cause is [a]

(a) **Lack of prime** (b) Gas or air in liquid
(c) Bent shaft (d) Moisture in lubricating oil

2 If pump discharge pressure is low, then probable cause is [b]

(a) Lack of prime **(b) Gas or air in liquid**
(c) Bent shaft (d) Moisture in lubricating oil

3 If there is excessive vibration in pump, then probable cause is [c]

(a) Lack of prime (b) Gas or air in liquid
(c) Bent shaft (d) Moisture in lubricating oil

4 If the bearing of pump overheats, then probable cause is [d]

(a) Lack of prime (b) Gas or air in liquid
(c) Bent shaft **(d) Moisture in lubricating oil**

5 If pump overloads the driver, then probable cause is [a]

(a) **Packing too tight** (b) Suction line not filled with liquid
(c) Gas or liquid in air (d) None of the above

6 Which of the following is not a criteria of pump selection [d]

(a) Type of duty required (b) Details of head
(c) Duration of availability of power supply **(d) The look of pump.**

7. HS Pump works with suction head. [b]

(a) 15-20 feet head **(b) 21-40 feet head**
(c) 41-80 feet head (d) None of the above.

8. VS Pump works with total head [b]

(a) Upto 46 Mtrs. head. **(b) 46-70 Mtrs. head**
(c) 70-100 Mtrs. Head (d) None of the above

9. Motor of the VS pump is located [c]

(a) Above the ground level (b) Below the ground level
(c) Deep in the bore (d) None of the above

10. Line shaft of the VS pump is lubricated [c]

(a) Spindle oil (b) Diesel oil

(c) Lub oil SAE-40/30 (d) None of the above

11. Priming is required for [a]

(a) **HS Pump** (b) VS Pump (c) Submersible Pump

12. RPM of submersible pump set is [d]

(a) 440 (b) 1440 (c) 380 **(d) 2800**

13. Which pump is most suitable for deep & tilted bore [c]

(a) HS Pump (b) VS Pump **(c) Submersible** (d) Jet pump

(e) None of above.

14. Redevelopment of bore is done [b]

(a) For smooth operation of pump

(b) **For taking good yield for bore**

(c) To maintain long life of bore

(d) To avoid the frequent failure of the pump

15. Capacity of pump set is selected on the ground of [a]

(a) **Yield, Static-water-level, Working-water-level.**

(b) Location of bore

(c) Type of starter provided

(d) Quantity of water to be used.

16. Pump fails mostly due to [b]

(a) Less working

(b) **Excessive working**

(c) Incorrect operation

(d) Failure of pump

17. Pump set motor burns due to [a]

(a) **Single phasing**

(b) Reverse phasing

(c) Over loading for a shorter period

(d) None of above.

18. For a 10 HP pump set which type of starter is suitable [b]

(a) DOL **(b) Start Delta** (c) Auto Transformer

(d) None of the above

19. A 5 HP pump set draws current on full load [c]

(a) 5 A (b) 10 A (c) **7.5 A** (d) 6 A

20. Ammeter is provided in control panel of pump set to measure the [d]
(a) Voltage (b) Frequency (c) Power Factor **(d)Current**

21. No. of contractors provided in star-delta starter [c]
(a) 1 (b) 2 **(c) 3** (d) 4

22. Pump Guard functions to protect the submersible pump set against [e]
a) Single Phasing
b) Reverse Phasing
c) Over Loading
d) Dry Running
e) **All of above.**

23. Automation of pump set is done to [e]
a) To limit the working of pumps
b) To avoid the wastage of water
c) To save the electrical energy
d) To reduce the man power
e) **All of the above.**

24. Centralized control of pumps means [b]
a) Operation of pump from individual pump houses
b) **Operation of all pumps from a single location**
c) None of the above

25. The functional head due to flow of water in the pipe line---- length of piping system. [b]
a) Inversely proportional to **(b) Directly proportional to**
(c) Constant and independent of (d) None of the above.

26. The functional head due to flow of water in the pipe line---- Diameter of pipe. [a]
a) **Inversely proportional to**
b) Directly proportional to
(c) Constant and independent of
(d) None of the above.

27. The functional head due to flow of water in pip line is directly proportional to---- of water.
a) Velocity [d]
b) (Square root of) Velocity
c) 1 / Velocity
d) **Velocity^2**

28. The average of velocity of water in the suction pipe --- the delivery pipe. [a]
a) **Less than in** (b) More than in
(c) Same as in (d) None of the above.

29. Theoretically the maximum suction head for ordinary centrifugal pumps should not exceed. [b]
a) 20 feet **(b) 34 feet** (c) 10 feet (d) 5 feet.

30. For vertical shaft pump and submersible pumps the suction head is always. [a]
(a) Positive(b) Negative (c) Zero (d) None of the above.

31. The motor of vertical shaft, 75 HP rating pump is. [c]
(a) Force air cooled (b) Natural air cooled
(c) Water cooled. (d) None of the above.

32. The specific speed of pump (in RPM) is the speed at which the impeller would run to give discharge of --- against head of ---- [a]
(a) **1 GPM, 1 Foot**
(b) 1 GPH, 1 Foot
(c) 1 GPM, 34 feet
(d) 1 GPH, 34 feet

33. The specific speed of pump is directly proportional to ---- where 'Q' is rate of discharge in GPH. [a]
(a)$\sqrt{Q}$ (b) Q (c) Q^2 (d) None of the above.

34. The specific speed of pump is directly proportional to --- where 'N' is speed of pump in RPM. [b]
(a) Square root (N) **(b) N** (c) N2 (d) None of the above.

35. Positive displacement pumps are generally less efficient than centrifugal pumps. State whether the statement is true or false [b]
(a) True **(b) False**

36. Installing larger diameter pipe in pumping system results in reduction in--------
a) static head**b) frictional head** c) both a and b d) neither a nor b

37. Generally water pipe lines are designed with water velocity of [b]
a) < 1 m/s **b) up to 2.0 m/s** c) > 2 m/s d) None of the above

38. What is the impact on flow and pressure when the impeller of a pump is trimmed? [c]
a) Flow decreases with increased pressure b) Both flow and pressure increases
c) Both pressure and flow decreases d) None of the above

39. For high flow requirement, pumps are generally operated in [a]
a) parallel b) series c) any of the above d) none of the above

40. "In case of throttling operation, the pump has to overcome additional pressure in order to deliver the reduced flow". Please indicate whether this statement is [a]

a) **True** (b) False

41. Friction losses in a pumping system is------ [b]

a) proportional to 1/Q **b) proportional to $1/Q^2$**

c) proportional to $1/Q^3$ d) proportional to $1/Q^4$

42. For large capacity centrifugal pumps, design efficiencies are in the range of [b]

a) around 70% **b) around 85%** c) around 95% d) any of above

43. The moving part in centrifugal pump is ----- [a]

a) **impeller** b) diffuser c) both a &b d) neither a nor b

44. The most efficient method of flow control in a pumping system is------- [b]

a) Throttling the flow **b) Speed control** c) Impeller trimming d) None

45. In case of increased suction lift from open wells, the delivery flow rate-------- [b]

a) increases **b) decreases** c) remains same d) none of the above

46. Pump efficiency generally increases with specific speed. State whether the statement is True or False. [a]

a) **True** (b) False

47. Throttling the delivery valve of a pump results in increased ____. [c]

a) head b) power **c) both (a) and (b)** d) either (a) or (b)

48. The operating point in a pumping system is identified by [c]

a) Point of intersection of system curve and efficiency curve

b) Point of intersection of pump curve and theoretical power curve

c) **Point of intersection of pump curve and system curve**

d) Cannot be decided by pump characteristic curves

49. The intersection point of the pump curve and the system curve is called-------- [b]

a) Pump efficiency **b) Best efficiency point**

c) System efficiency d) None of the above

50. If the speed of a centrifugal pump is doubled, its power consumption increases by------- times. [c]

a) two b) four **c) eight** d) no change

51. Installation of Variable frequency drives (VFD) allows the motor to be operated with ____. [a]

a) **lower start-up current** b) higher start-up current

c) constant current d) none of the above

52. In case of centrifugal pumps, impeller diameter changes are generally limited to reducing the diameter to about ____ of maximum size. [a]

a) **75%** b)50% c) 25% d) None of the above

53. If the delivery valve of the pump is throttled such that it delivers 30% of the rated flow, one of the best options for improved energy efficiency would be [c]

a) Trimming of the impeller b) Replacing the motor

c) **Replacing the impeller with a smaller size impeller** d) None of the above

54. Small by-pass lines are installed some times to _____. [c]

a) control flow rate b) control pump delivery head

c) prevent pump running at zero flow d) reduce pump power consumption

7. TRACK CROSSINGS

1 The minimum height above rail level of the lowest portion of any conductor of 11 kV to 66 kV overhead lines crossing (including guard wire) the railway track should be [a]

(a) **14.1 m** (b) 14.6 m (c) 15.4 m (d) 17.9 m

2 The minimum height above rail level of the lowest portion of any conductor of 66 kV to132 kV overheads lines crossing the railway track should be [b]

(a) 14.1 m **(b) 14.6 m** (c) 15.4 m (d) 17.9 m

3 The minimum depth of underground cable track crossing (through) pipe should be [a]

(a) **1 m** (b) 1.5 m (c) 2 m (d) 2.5 m

4 The Electrical Inspector at zonal railway is [a]

(a) **CEE** (b) Dy. CEE (c) DRM (Elect.) (d) CESE.

5 The regulations for electrical line crossing on railway track is not applicable to [d]

(a) Crossing of railway track laid underground/ inside tube and tunnels

(b) 1500 V DC traction system

(c) 25 kV, 50 Hz traction systems

(d) **All of the above**

6 In special cases the reduction in specified clearance of electrical crossing on railway track can be permitted by [a]

(a) **Electrical Inspector** (b) Astt. Electrical Inspector

(c) DRM (d) ADRM

7 In view of electrical lines crossing on railway tracks the materials used should comply with Indian Standards specifications but where these are not available, which of the following should be followed [a]

(a) **British standard specifications**

(b) US standard specifications

(c) Russian standard specifications

(d) France standard specifications

8 Electrical crossings on railway tracks should be inspected by the owner at a interval not exceeding [d]

(a) 3 months (b) 6 months (c) 9 months **(d) 12 months**

9 If at instance of railways any electrical crossing on railway track is to be shifted or modified the cost will be borne by___ (shifting not foreseen at the time of agreement) [b]

(a) Owner **(b) Railways** (c) Both (d) Either a or b

10 In case of defects and failures in electrical crossing on railway tracks, owner has to sent a detailed report to all the authorities mentioned in the regulations, within _____ hrs of the first report [d]

(a) 12 (b) 24 (c) 36 **(d) 48**

11 Angle of overhead electrical line crossing to railway track shall be [a]

(a) **Right angle**

(b) Acute angle

(c) Obtuse angle

(d) Angle does not matter.

12 In special cases the maximum permitted deviation in angle of OH electrical line crossing to railway track shall be [c]

(a) 10 deg (b) 20 deg **(c) 30 deg** (d) 45 deg

13 The minimum distance of structures (for electrical line crossing) from the centre of nearest railway track shall be equal to the height of the structure in meters plus [b]

(a) 3 m **(b) 6 m** (c) 9 m (d) 12 m

14 The span of the OH electrical line crossing the railway track is restricted to [c]

(a) 100 m (b) 200 m **(c) 300 m** (d) 400 m

15 The minimum height above rail level of the lowest portion of any conductor of 132kV to 220kV overhead lines crossing (including guard wire) the railway track should be [c]

(a) 14.1 m (b) 14.6 m **(c) 15.4 m** (d) 17.9 m

16 The minimum height above rail level of the lowest portion of any conductor of 220kV to 400kV overhead lines crossing (including guard wire) the railway track should be [d]

(a) 14.1 m (b) 4.6 m (c) 15.4 m **(d) 17.9 m**

17 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 33 kV lines should be [a]

(a) **1.5 m** (b) 2 m (c) 2.25 m (d) 2.5 m

18 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 66 kV lines should be [b]

(a) 1.5 m **(b) 2 m** (c) 2.25 m (d) 2.5 m

19 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 110kV lines should be [c]

(a) 1.5 m (b) 2 m **(c) 2.25 m** (d) 2.5 m

20 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 132kV lines should be [d]

(a) 1.5 m (b) 2 m (c) 2.25 m **(d) 2.5 m**

21 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 220kV lines should be [c]

(a) 2.25m (b) 2.5 m **c) 3.5 m** (d) 6.0 m

22 In special circumstances if the railway crane has to work under the under the overhead electrical line crossing, the minimum clearance between the highest point of the jib and the lowest conductor of the 400kV lines should be [d]

(a) 2.25m (b) 2.5m (c) 3.5 **(d) 6.0 m**

23 In sections where tracks are not to be electrified in future,linesupto 11 kV overhead crossing are permitted with clearance between lowest conductor of the line and railway track [b]

(a) 9 m **(b) 10.95 m** (c) 11.05 m (d) 12.1 m

24 The factor of safety of each string of insulator used for overhead electrical crossing on railway track should not be less than [b]

(a) 1 **(b) 2** (c) 3 (d) 4

25 The minimum height between any guard wire and a live conductor of electrical crossing on railway track shall not be less than [b]

(a) 1 m **(b) 1.5 m** (c) 2 m (d) 2.5 m

26 Each structure on either side of the railway track, supporting the span of overhead electrical line crossing should be provided with_____ no. of independent earths [b]

(a) 1 **(b) 2** (c) 3 (d) 4

27 The maximum permissible earth resistance on either side of the electrical overhead line crossing (on railway track) is [c]

(a) 5 ohm (b) 8 ohm **(c) 10 ohm** (d) 12 ohm

28 The owner of the overhead electric line crossing on railway tracks, is required to inspect and test the earth on hot dry day at an interval of [d]

(a) 3 months (b) 6 months (c) 9 months **(d) 12 months**

29 Which of the following should be displayed on the marker at each end of the underground cable crossing on railway track [a]

(a) **No. of cables** (b) Size of cable

(c) Make of cables (d) All of the above

30 Which of the following data is to be provided by the owner, while proposing for overhead electrical line crossing on railway track [a]

(a) **Temperature data provided**

(b) Name of supervisor from owner's side

(c) Life of crossing

(d) None of the above.

31 The final authority to grant the approval for proposed electrical line crossing of EB authoritieson railway track

[b]

(a) Electrical Inspector **(b) DRM** (c) DRM (Elect.) (d) ADRM

8. INDIAN ELECTRICITY RULES

1 The maximum variation allowed in voltage of LV & MV AC supply is [d]

(a) ± 2 % (b) ± 3 % (c) ± 4 % **(d) ± 5 %**

2 The maximum variation allowed in voltage of HV& EHV AC supply is [c]

(a) ± 8.5 % (b) ± 10.5 % **(c) ± 12.5 %** (d) ± 14.5 %

3 The maximum variation allowed in frequency of AC supply is [b]

(a) ± 2 % **(b) ± 3 %** (c) ± 4 % (d) ± 5 %

4 Clearance of the lowest conductor (across the street) from the ground for LT and MT lines should be [c]

(a) 17 ft. (b) 18 ft. **(c) 19 ft.** (d) 20 ft.

5 Clearance of the lowest conductor (across the street) from the ground for HT lines should be [d]

(a) 17 ft. (b) 18 ft. (c) 19 ft. **(d) 20 ft.**

6 Clearance of the lowest conductor (along the street) from the ground for LT and MT lines should be [b]

(a) 17 ft. **(b) 18 ft.** (c) 19 ft. (d) 20 ft.

7 Clearance of the lowest conductor (along the street) from the ground for HT lines should be [c]

(a) 17 ft. (b) 18 ft. **(c) 19 ft.** (d) 20 ft.

8 Clearance of the lowest conductor vertical above the building for LT and MT lines should be [c]

(a) 4 ft. (b) 6 ft. **(c) 8 ft.** (d) 12 ft.

9 Clearance of the lowest conductor vertical above the building for HT lines should be [d]

(a) 4 ft. (b) 6 ft. (c) 8 ft. **(d) 12 ft.**

10 Clearance of the conductor Horizontal from the building for LT and MT lines should be [a]

(a) **4 ft.** (b) 6 ft. (c) 8 ft. (d) 12 ft.

11 Clearance of the conductor Horizontal from the building for HT lines should be [b]

(a) 4 ft. **(b) 6 ft.** (c) 8 ft. (d) 12 ft.

12 The on line vertical spacing between the conductors for 400/230 V, 150 ft. span lines should be [b]

(a) 1’3” **(b) 1’6”** (c) 2’ (d) 2’6”

13 The on line vertical spacing between the conductors for 400/230 V, 150-250 ft. span lines should be [c]

(a) 1’3” (b) 1’6” **(c) 2’** (d) 2’6”

14 The on line vertical spacing between the conductors for 11 kV lines should be [c]

(a) 1’3” (b) 1’6” **(c) 2’** (d) 2’6”

15 The on line horizontal spacing between the conductors for 400/230 V, 150 ft. span lines should be [a]

(a) **1’3”** (b) 1’6” (c) 2’ (d) 2’6”

16 The on line horizontal spacing between the conductors for 400/230 V, 150-250 ft. span lines should be [c]

(a) 1’3” (b) 1’6” **(c) 2’** (d) 2’6”

17 The on line horizontal spacing between the conductors for 11 kV lines should be [d]

(a) 1’3” (b) 1’6” (c) 2’6” **(d) 3’9”**

18 The clearance between the conductor and pole for 400/230 V, 150 ft span lines, should be

(a) **6”** (b) 9” (c) 12” (d) 1’3” [a]

19 The clearance between the conductor and pole for 400/230 V, 150-250 ft span lines, should be [b]

(a) 6” **(b) 9”** (c) 12” (d) 1’3”

20 The clearance between the conductor and pole for 11 kV lines, should be [c]

(a) 6” (b) 9” **(c) 12”** (d) 1’3”

9. POLICY

1 Provision of rebate by state electricity authority is applicable if the power factor is kept above [c]

(a) 0.9 (b) 0.92 **(c) 0.95** (d) 0.98

2. Penalty is imposed by state electricity authority if the power factor is below [a]

(a) 0.9 (b) 0.92 (c) 0.95 (d) 0.98

3 Electric energy charges from the railway employees residing in railway colonies are at [d]

(a) Flat rate
(b) Fixed rate
(c) Average consumption
(d) **The rate that of local supply authority**

4 Electric energy charges from the staff/ teachers of KendriyaVidhyalaya residing in railway colonies is at [d]

(a) Flat rate
(b) Fixed rate
(c) Average consumption
(d) **The rate applicable to railway employees**

5 Electric energy charges from the social welfare organizations such as railway institute, community halls, clubs, etc. is at [d]

(a) Flat rate
(b) Fixed rate
(c) Average consumption
(d) **The rate applicable to railway employee subject to maximum limit of consumption.**

6 Electric energy charges from the religious buildings (electric supply fed by railway) such as temples. Mosque etc is at [d]

(a) Flat rate
(b) Fixed rate
(c) Average consumption
(d) **The rate that of local supply authority**

7 Per day charges from officers on duty (entitled to 1st class AC travel) for occupation of air conditioned accommodation on railway rest house is Rs. [c]

(a) 3 (b) 5 **(c) 6** (d) 7

8 Per day charges from officers on leave (entitled to 1st class AC travel) for occupation of air conditioned accommodation on railway rest house is prescribed room rent plus Rs . [c]

(a) 3 (b) 5 **(c) 6** (d) 7

9 Per day charges from officers on duty (entitled to 1st class AC travel) for occupation of air conditioned accommodation on railway rest house during winter season is Rs. [d]

(a) 3 (b) 5 (c) 6 **(d) No charges**

10 The firms dealing with coin operated person weighing machines has to deposit security money equivalent to [a]

(a) **One month electric charges** (b)Two month electric charges

(c) Three month electric charges (d) No charges.

11 The private parties applying for electric connection from railways has to deposit security money equivalent to [c]

(a) One month electric charges

(b) Two month electric charges

(c) Three month electric charges

(d) No charges.

12 As per Railway Board recommendations, following are to be connected with DG set supply [d]

(a) Vacuum testing plants

(b) Water coolers on platforms

(c) Hospital with operation theatre

(d) All of the above.

13 As per Railway Board recommendations, the stations/ halts should be electrified, where the electric supply is available within [a]

(a) **1 km** (b) 1.5 km (c) 2 km (d) 2.5 km

14 The porters rest centres are treated as [a]

(a) **Service building** (b) Private building

(c) Passenger amenity (d) None of the above

15 As per Indian Electricity Act, penalty against unauthorised electricity connection is [a]

(a) **Imprisonment up to 3 yrs and fine up to Rs. 1000/-**

(b) Imprisonment up to 2 yrs and fine up to Rs. 1000/-

(c) Imprisonment up to 3 yrs and fine up to Rs. 1500/-

(d) Imprisonment up to 2 yrs and fine up to Rs. 1500/-

16 Number of geysers that can be provided in officer's flat (on special request) [a]

(a) **1** (b) 2 (c) 3 (d) 4

17 Number of geysers that can be provided in the GM's bungalow is [b]

(a) 1 **(b) 2** (c) 3 (d) 4

18 The railway stations at zonal headquarters and state capitals are classified as of category

(a) **A** (b) B (c) C (d) D [a]

19 The railway stations at divisional headquarters and district headquarters are classified as of category [b]

(a) A **(b) B** (c) C (d) D

20 As per Railway Board recommendations, the light fittings for platform on category A and B stations are [c]

(a) 1 x 36 W FL tube (b) 2 x 36 W HPSV

(c) 1 x 70 W HPSV (d) 2 x 36 W HPSV

21 As per Railway Board recommendations, the light fittings for platform on category C stations are [a]

(a) **1 x 36 W FL tube** (b) 2 x 36 W HPSV

(c) 1 x 70 W HPSV (d) 2 x 36 W HPSV

22 As per Railway Board recommendations, the light fittings for ASM office, SM office, enquiry and PRS on category A and B stations are [a]

(a) **2 x 36 W mirror optic FL tube** (b) 4 x 36 W mirror optic FL tube

(c) 2 x 36 W box type FL tube (d) 4 x 36 W box type FL tube

23 As per Railway Boards recommendations, the light fittings in station approach and car parks are [a]

(a) **1 x 70 W HPSV** (b) 2 x 70 W HPSV

(c) 1 x 40 W Box type (d) 2 x 40 W box type

24 As per Railway Board recommendations, on platform having width of 9-6 m, fannage should be provided in [a]

(a) **1 row** (b) 2 rows (c) 3 rows (d) 4 rows

25 As per Railway Board recommendations, on platform having width more than 9 m, fannage should be provided in [b]

(a) 1 row **(b) 2 rows** (c) 3 rows (d) 4 rows

26 As per Railway Board recommendations, the sweep of fans provided on platforms should be [d]

(a) 800 mm (b) 1200 mm (c) 1500 mm **(d) 1800 mm**

27 As per Railway Board recommendations, the sweep of fans provided in offices, waiting hall etc. should be [b]

(a) 800 mm **(b) 1200 mm** (c) 1500 mm (d) 1800 mm

28 As per Railway Board recommendations, the sweep of fans provided in retiring rooms on each bed should be [b]

(a) 800 mm **(b) 1200 mm** (c) 1500 mm (d) 1800 mm

29 At stations where neither electrical supervisor nor engineering supervisor is headquartered, the upkeep of pumps in water supply system is under [b]

(a) S & T supervisor **(b) Station Master** (c) Gangman (d) Pointsman

30 State Electricity Board charges Electricity Duty against selling electricity to railways amounting Rs. [d]

(a) 10,000/- (b) 50,000/- (c) 75,000/- **(d) No charges**

31 Railway Board has recommended that locations where HPSV lamps affect the colour light signalling should be replaced by [c]

(a) Mercury Vapour Lamps

(b) FL tube fittings

(c) **Any of A & B**

(d) No such recommendation has been made.

32 The maintenance of water coolers donated by private parties is to be done by [b]

(a) The donating party

(b) **Railways**

(c) On contract

(d) Any of the above.

33 The electrical energy consumption on water coolers donated by private parties are to be borne by [b]

(a) The donating party

(b) **Railways**

(c) SEB

(d) Through collection from public

34 The Railway Board has recommended to provide water coolers at stations with _____ passengers (inward & outward) per day [b]

(a) 500 **(b) 1000** (c) 1500 (d) 2000

10. ELECTRICAL UNITS: EQUIVALENTS & FORMULAE

1. One HP = [a]

(a) **746 watts** (b) 746 watts (c) 860 watts (d) 856 wats

2. Torque in ft. lbs. = [a]

(a) **HP x 33000 / (RPM x 2π)** (b) HP x 2 / (RPM x 33000)
(b) HP x RPM / (2 x 33000) (d) RPM x 2 / (HP x 33000)

3. Current = [a]

(a) **Watts/Volts** (b) Volts/Watts
(c) Kilowatt/Volts (d) Kilovolt/watt

4. Motor output in HP= [a]

(a) **KW input x efficiency/0.746** (b) KW input x 0.746/efficiency
(c) Efficiency x 0.746/KW input (d) 0.746/(KW input x efficiency)

5. kVA equal to [d]

(a) 1000 x Amps/ volts (b) volts x Amps x 1000
(c) Volts x 1000/Amps **(d) Amps x volts/1000**

6. Power factor = [a]

(a) **True Power/Apparent power** (b) Apparent power/True power
(c) Average power/True power (d) Apparent power/Average power

7. True power in three-phase circuit in Kilowatt is [b]

(a) 1.414 x volts x amperes x pf/1000 **(b) 1.73 x volts x amperes x pf/1000**
(c) Volts x Amperes x pf/1000 (d) Volts x Amperes x 1000/pf

8. Amperes drawn by single-phase motor are equal to [c]

(a) Efficiency x Volts x pf / (HP x 746) (b) Efficiency x pf/(volt x HP x 746)
(c) HP x 746 / (Efficiency x volts x pf) (d) HP x746 x volts/(Efficiency x pf)

9. Amperes drawn by three phase motor are equal to [c]

(a) Efficiency x Volts x pf / (HP x 746) (b) Efficiency x pf/(volt x HP x 746)
(c) HP x 746/(Efficiency x volts x pf x 1.73) (d) HP x 746 x volts/(Efficiency x pf)

10. One Kilowatt = [a]

(a) **1.314 HP** (b) 13.41 HP (c) 134.1 HP (d) 1341 HP

11. One Kilowatt = [d]
(a) 1360 Metric HP (b) 136 Metric HP
(c) 13.60 Metric HP **(d) 1.360 Metric HP**

12. One Kwh = [c]
(a) 34.13 BTU (b) 44.13 BTU
(c) 3.413 BTU (d) 4.413 BTU

13. One Kwh = [b]
(a) 1000 calories **(b) 860 Kilocalories** (c) 740 Kilocalories (d) 970 Kilocalories

14. One BTU = [d]
(a) 0.2520 calories (b) 2.520 calories (c) 25.20 calories **(d) 252.0 calories**

15. One KiloCalorie = [d]
(a) 39.68 BTU (b) 4.968 BTU (c) 49.68 BTU **(d) 3.968 BTU**

16. One foot pound = [a]
(a) **0.1383 M Kg** (b) 1.383 M Kg (c) 13.83 M Kg (d) 138.3 M Kg

17. One BTU = [d]
(a) 0.1076 M Kg (b) 1.076 M Kg (c) 10.76 M Kg **(d) 107.6 M Kg**

18. One Kilowatt = [b]
(a) 202 M Kg/sec **(b) 102 M Kg /sec** (c) 20.2 M Kg/sec (d) 10.2 M Kg/sec

19. One Electrical Unit = [a]
(a) **1 Kwh** (b) 1 Kw (c) 1 kVA (d) Watt

20. Power factor = [a]
(a) **R/Z** (b) Z/R (c) V/I (d) I/V

21. The current rating of PVC insulated and PVC sheathed four core , armoured aluminium cable of size 120 sq mm (laid direct in ground) is approximately [b]
(a) 80 amps **(b) 185 amps** (c) 290 amps (d) 320 amps

22. The current rating of PVC insulated and PVC sheathed four core , armoured aluminium cable of size 70 sq mm (laid in duct) is approximately [a]
(a) **115 amps** (b) 210 amps (c) 290 amps (d) 350 amps

23. The current rating of PVC insulated and PVC sheathed four core , armoured aluminium cable of size 50 sq mm (laid in air) is approximately [b]

(a) 65 amps **(b) 105 amps** (c) 200 amps (d) 250 amps

24 The current rating of PVC insulated and PVC sheathed four core , armoured aluminium cable of size 35 sq mm (laid direct in ground) is approximately [a]

(a) **92 amps** (b) 160 amps (c) 200 amps (d) 250 amps

25 The current rating of PVC insulated and PVC sheathed four core , armoured aluminium cable of size 25 sq mm (laid direct in ground) is approximately [b]

(a) 55 amps **(b) 76 amps** (c) 90 amps (d) 150 amp

11. INDUCTION MOTOR

1. Which of the following component is usually fabricated out of silicon steel ? [c]
   a. Bearings b. Shaft **c. Stator core** d. None of the above

2. The frame of an induction motor is usually made of [b]
   a. Silicon steel **b. cast iron** c. aluminium d. bronze

3. The shaft of an induction motor is made of [c]
   a. high speed steel b. stainless steel
   c. carbon steel d. cast iron

4. In squirrel cage induction motors, the rotor slots are usually given slight skew in order to [d]
   a. reduce windage losses b. reduce eddy currents
   c. reduce accumulation of dirt and dust **d. reduce magnetic hum**

5. In case the air gap in an induction motor is increased [b]
   a. the magnetizing current of the rotor will decrease **b. the power factor will decrease**
   c. speed of motor will increased. the windage losses will increase

6. In N_s is the synchronous speed and s the slip, then actual running speed of an induction motor will be [c]
   a. Ns b. s.Ns **c. (1-s)Ns** d. (Ns-1)s

7. Slip rings are usually made of [c]
   a. copper b. Carbon **c. phosphor bronze** d. aluminium

8. The efficiency of an induction motor can be expected to be nearly [b]
   a. 60 to 90% **b. 80 to 90%** c. 95 to 98% d. 99%

9. The number of slip rings on a squirrel-cage induction motor is usually [d]
   a) 3 b) 1 c) 6 **d) 0**

10. Running torque of the squirrel-cage induction motor on full load is [a]
    a. **low** b. negligible c. same as full-load torque d. slightly more than full-load torque

11. Star-delta starting of motors is not possible in case of [a]
    a. **single phase motors** b. variable speed motors
    c. low horse power motors d. high speed motors

12. An induction motor with 1000 r.p.m. speed will have [b]
a. 8 poles **b. 6 poles** c. 4 poles d. 2 poles

13. The crawling in the induction motor is caused by [c]
a. low voltage supply b. high loads
c. harmonics developed in the motor d. improper design of machine

14. It is advisable to avoid line starting of induction motor and use starter because [a]
a. **motor take five to seven time its** b. it will pick up very high speed and **full load current** may go out of step
c. it will run in reverse direction d. starting torque is very high

15. Rotor rheostat control method of speed control is used for [b]
a. squirrel-cage induction motors only **b. slip ring induction motors only**
c. both (a) and (b) d. none of the above

16. If any two phases for an induction motor are interchanged [a]
a. **the motor will run in reverse direction** b. the motor will run at reduced speed **direction**
c. the motor will not run d. the motor will burn

17. An induction motor is [c]
a. self-starting with zero torque b. self starting with high torque
c. self starting with low torque d. non self starting

18. In three-phase squirrel-cage induction motors [b]
a. rotor conductor ends are short-circuited through slip rings **b. rotor conductors are short-circuited through end rings**
c. rotor conductors are kept open d.rotor conductors are connected to insulation

19. In a three-phase induction motor, the number of poles in the rotor winding is always [d]
a. zero stator
b. more than the number of poles in stator
c. less than number of poles in stator
d. equal to number of poles in stator

20. DOL starting of induction motors is usually restricted to [a]
a. **low horsepower motors** b. variable speed motors
c. high horsepower motors d. high speed motors

21. The power factor of an induction motor under no-load conditions will be closer to [a]
a. **0.2 lagging** b. 0.2 leading
c. 0.5 leading d. unity

22. Size of a high speed motor as compared to low speed motor for the same H.P. will be [b]
a. bigger **b. smaller** c. same d. any of the above

23. Slip ring motor is recommended where [d]
a. speed control is required b.frequent starting, stopping andreversingisrequired
c. high starting torque is needed**. all above features are required**

24. Which type of bearing is provided in small induction motors to support the rotor shaft [a]
a. ball bearings b. cast iron bearings
c. bush bearings d. none of the above

25. Lubricant used for ball bearing is usually [b]
a. graphite **b. grease**
c. mineral oil d. molasses

26. If the rotor circuit of a squirrel cage induction motor is open, the rotor will [d]
a. run at very high speed b. run at very low speed
c. make noise **d. not run**

27. The advantage of a slip-ring induction motor over a squirrel cage induction motor is that [c]
a. it has higher efficiency b. it has higher power factor
c. **it can be started with help of rotor resistance starter** d. non of the above

28. A 3-phase slip-ring induction motor is always started with [d]
a. a starting winding
b.squirrel cage winding
c. no external resistance in rotor circuit
d. full external resistance in rotor circuit

29. The synchronous speed of a 3- phase induction motor is given by the formula [a]
a. Ns =120f/P b. Ns =120P/f
c. Ns =120 fP d. Ns = f P/120

30. If single-phasing occurs on the running position in an induction motor, the motor will [a]
a. fail to carry load b. produce peculiar noise
c. draw unbalanced and excessive currents d. not start

31. A pump induction motor is switched on to a supply 25 percent lower than its rated voltage. The pump runs; eventually [a]
a. the pump will get heated and consequentlyget damaged
b. the pup will stall after sometimes
c. the pump will continue to run at lower speed without damage
d. None

32. If there is an open circuit in the rotor of a squirrel cage induction motor [d]
a. rotor will overheat b. line fuses will blow
c. motor will be noisy **d. motor will not start**

33. The principle of operation of a 3phase induction motor is most similar to that of [a]
a. transformer with a shorted secondary b. synchronous motor
c. capacitor start induction run motor d. repulsion start motor induction motor

34. The A.C. motor which would be best suited to drive a centrifugal pump for discharging a variable quantity of water against a fixed head is the [d]
a. repulsion motor b. synchronous motor
c. squirrel cage **d. slip ring induction motor**

35. Two of the power supply terminals to a 3-phase induction motor get inter-changed during reconnection after maintenance of the motor. When put back into service, the motor will [d]
a. get heated up and damaged
b. rotate in the same direction as it was prior to maintenance
c. fail to rotate
d.rotate in the reverse direction to that prior to maintenance

36. The frame of an induction motor is made of [b]
a. carbon **b. closed grained cast iron**
c. aluminium d. stainless steel

37. Under which method of starting an induction motor is expected to take largest starting current? [c]
a. star-delta starting b. auto-transformer starting
c. **direct on line starting** d. stator rotor starting

38. The direction of rotation of a 3-phase induction motor can be reversed by [a]
a. interchanging any two phases b. supplying low voltage
c. reducing load d. reducing frequency

39. The starting torque of the slip ring induction motor can be increased by [b]

a. adding resistance to the stator **b. adding resistance to the rotor**

c. adding resistance to stator as well as the rotor d. none of the above

40. The value of average flux density in air gap in an induction motor, should be small [c]

a. to achieve good efficiency b. to get poor power factor

c. **to get good power factor** d. for minimum cost

41. An induction motor has a rated speed of 720 r.p.m. How many poles has its rotating magnetic field? [a]

a. 8 poles b. 6 poles c . 4 poles d.2 poles

42. During starting if an induction motor hums, the probable cause could be [d]

a. open circuit b. unequal phase resistance

c. inter-turn short circuit on rotor **d. any of the above**

43. The probable reason for an induction motor running too hot could be [d]

a. low voltage b. uneven air gap

c. clogged ventilating ducts **d. any of the above**

44. In case single phasing occurs in delta connected motor [a]

a. one phase will be seriously over-loaded and two others will be slightly overloaded

b. two phases will be seriously over-loaded and there will be no current in the third phase

c. there will be no current in one phases

d. there will be no current in two phases

45. Synchronous speed is defined as [b]

a. the speed of a synchronous motor

b. the actual speed at which a magnetic field rotates

c. the speed of the rotor of an induction

d. the speed of an induction motor at no motor load

46. The speed of three phase cage-rotor induction motor depends on [d]

a. number of poles only b. input voltage

c. frequency of supply only **d. number of poles and frequency of supply**

e. none of the above

47. The two important parts of a 3-phase induction motor are [b]
a. rotor and armature **b. rotor and stator**
c. slip ring and brushes d. stator and field

48. Phase advancers are used with induction motors to [d]
a. reduce noise b. reduce vibrations
c. reduce copper losses **d. improve power factor**

12. CABLES

1. The insulating material for a cable should have [d]
a. low cost b. high dielectric strength
c. high mechanical strength **d. all of the above**

2. Which of the following protects a cable against mechanical injury [c]
a. bedding b. sheath **c. armouring** d. none of he above

3. Which of the following insulation is used in cables? [d]
a. Varnished cambric b. rubber c. paper **d. any of the above**

4. Empire tape is [a]
a. **varnished cambric** b. vulcanized rubber
c. impregnated paper d. none of the above

5. The thickness of the layer on insulation on the conductor, in cables, depends upon [c]
a. bedding b. sheath **c. armouring** d. none of he above

6. The bedding on a cable consists of [c]
a. Hessian cloth b. jute **c. any of the above** d. none of the above

7. The insulating material for cables should [d]
a. be acid proof b. be non-inflammable
c. be non-hygroscopic **d. have all above properties**

8. In a cable immediately above metallic sheath…….. is provided [b]
a. earthing connection **b. bedding** c. armouring d. none of the above

9. In case of three core flexible cable the colour of the neutral is [a]
a. **blue** b. black c. brown d. none of the above

10. Low tension cables are generally used upto [d]
a. 200 V b. 500 V c. 700 V **d. 1000 V**

11. PVC stands for [a]
a. polyvinyl chloride b. post varnish conductor
c. pressed and varnished cloth d. positive voltage conductor
e. all above parameters

12 In the cables, the location of fault is usually found out by comparing [d]
a. the resistance of the conductor b. the inductance of conductors
c. the capacitances of insulated conductors **d. all above parameters**

13. The material for armouring on cable is usually [c]
a. steel tape b. galvanized steel wire
c. any of the above d. none of the above

14. In the cables, sheaths are used to [a]
a. **prevent the moisture from entering the cable** b. provide enough strength
c. provide proper insulation d. none of the above

15. Underground cables are laid at sufficient depth [c]
a. to minimize temperature stresses
b. to avoid being unearthed easily due to removal of soil
c. to minimize the effect of shocks and vibrations due to passing vehicles, etc
d. for all of the above reasons

16. The advantage of cable over overhead transmission lines is [c]
a. easy maintenance b. low cost
c. can be used in congested areas d. can be used in high voltage circuits

17. The insulating material should have [d]
a. low permittivity b. high resistivity
c. high dielectric strength **d. all of the above**

18. The disadvantage with paper as insulating material is [a]
a. **it is hygroscopic** b. it has high capacitance
c. it is an organic material d. none of the above

TRAIN LIGHTING
AND
AIR CONDITIONING

CONTENTS

Item No.	Description	Page No.
1.	CELLS	66
2.	INVERTER	72
3.	ALTERNATOR , RRU AND ERRU	73
4.	RAILWAY CARRIAGE FANS	86
5.	TRAIN LIGHTING WIRING	87
6.	AIR CONDITIONING	90
7.	RMPU	97
8.	LHB COACHES	109
9.	ABBREVIATIONS	116
10.	EOG POWER CAR	119

1. CELLS

1. An electrolyte use in train lighting cell is the mixture of **[c]**

   a) Sulphuric acid and tap water
   b) Sulphuric acid and mineral water
   c) Sulfuric acid and demineralized/distilled water
   d) None of the above

2. When cell is fully charged, the positive plate becomes **[a]**

   a) Lead peroxide c) Lead sulfate
   b) Spongy lead d) None

3. When the lead acid cell is fully charged the negative plate becomes **[c]**

   a) Lead peroxide c) Lead sulfate
   b) Spongy lead d) None

4. The capacity of cell is measured in **[a]**

   a) Ampere hour c) Amperes
   b) Watt hour d) Watts

5. Internal resistance of lead acid cell is mainly due to **[d]**

   a) Size of plates c) Nature of electrolyte
   b) Distance between the plates **d) All the above**

6. Trickle charging of storage battery help to **[a]**

   a) Compensate for internal losses c) Increase its capacity
   b) Maintains proper electrolyte d) None

7. The capacity of Battery used in 110V T.L system **[a]**

   a) 120AH c) 320Ah
   b) 210Ah d) 90AH

8. SPGR of fully charged cell **[a]**

   a) 1.220 c) 1.140
   b) 1.180 d) 1.100

9. SPGR of half charged cell **[a]**

   a) 1.210
   b) 1.175
   c) 1.100
   d) 1.140

10. SPGR of fully discharged cell is **[d]**

a) 1.210 c) 1.200
b) 1.175 **d) 1.140**

11. Total number of cells available in TL flooded Battery of 110V system **[a]**

a) 54 c) 24
b) 56 d) 18

12. Sulphation occurs due to **[d]**

a) Cells kept under discharged condition
b) Cells kept under not fully charged condition
c) Cells over charged
d) All the above

13. The codal life of lead acid TL/AC cells is **[a]**

a) 4 c) 2
b) 3 d) None

14. The capacity of batteries used for RMPU AC coaches is **[d]**

a) 525 AH c) 800 AH
b) 400 AH **d) 1100 AH**

15. VRLA Batteries works on **[a]**

a) Oxygen recombination principle
b) Hydrogen recombination principle
c) Hydrogen-oxygen recombination principle
d) None of the above

16. The VRLA cells can be mounted in aposition. **[d]**

a) Horizontal c) Slanting
b) Vertical **d) Both a & b**

18. Conductivity is the ability of a solution to conduct electrical current commonly expressed in **[c]**

a) Amperes
b) Watt
c) Micro mhos/cm
d) None

19. Conductivity of DM water is measured by **[a]**

a) Conductivity meter c) pH meter
b) Universal solution d) all of the above

20. Acceptable quality of treated water conductivity is in micro mhos/cm **[a]**

a) <10 c) 40
b) <30 d) None

21. Acceptable quality of treated water PH value will be **[a]**

a) 6.8 to 7.2
b) 7.5 to 8.5
c) 8.5 to 10
d) None

22. VRLA Batteries means **[a]**

a) Valve regulated lead acid batteries
b) Voltage regulated lead acid batteries
c) Both a & b
d) None

23. SMF Batteries stands for **[a]**

a) Sealed maintenance free batteries
b) Self maintenance free batteries
c) a&b
d) None

24. Frequent topping up of distilled water in VRLA cells **[b]**

a) Required
b) Not required
c) Sometimes required
d) None

25. Self discharge of VRLA Battery _____ percentage of capacity for week **[a]**

a) 0.5% to 1%
b) 2%
c) 3%
d) 4%

26. VRLA Battery separators can be of **[c]**

a) The gelled electrolyte type
b) The absorbed electrolyte type
c) a & b
d) None of the above

27. For VRLA Battery, every 1 degree C in temperature, the charge/float voltage is to be reduced by _____ per cell **[a]**

a) 3mv
b) 5 mv
c) 1 mv
d) 6 mv

28. Codal life of VRLA battery is **[a]**

a) 4 years
b) 5 years
c) 3 years
d) 7 years

29. Charging voltage/ Current ripple factor for VRLA batteries should less than **[b]**

a) less than 5 %
b) less than 2 %
c) less than 15 %
d) none

30. The containers and covers of VRLA batteries are made up of **[a]**

a) PPCP (poly-Propylene co-polymer)
b) Hard rubber
c) PVC
d) None

31. Train Lighting mono block 120 AH battery belongs to **[a]**

a) Lead acid battery
b) Nickel iron battery
c) Nickel cadmium battery
d) All the above

32. The specific gravity of the concentrated sulphuric acid is **[a]**

a) 1.840
b) 1.200
c) 1.220
d) 1.180

33. The specific gravity of the electrolyte used in TL cellsis **[b]**
a) 1.800 b) 1.200
c) 1.100 d) 1.180

34. The positive plate of lead acid is made of **[a]**
a) Lead peroxide b) Spongy lead
c) Lead sulphate d) None

35. The secondary cell **[a]**
a) Once discharged it can be charged
b) Once discharged it cannot be charged
c) Once discharged it had to throw away
d) None

36. When fully charged lead acid cell is discharged, the positive and negative plates becomes **[c]**
a) Lead peroxide b) Spongy lead
c) Lead sulphate d) None

37. When the lead acid cell is recharged the specific gravity of the electrolyte **[a]**
a) Increases b) Decreases
c) As it is d) None

38. Battery capacity depends upon **[d]**
a) Size and no. of plates b) Quantity of active material present
c) Quantity of electrolyte d) All the above

39. The capacity of battery is expressed in terms of **[b]**
a) Current rating b) AH rating
c) Voltage rating d) VH rating

40. The number of positive plates in a secondary cell is always less than the negative plates by **[a]**
a) 1 b) 2
c) 3 d) None

41. Normal charge of battery is **[a]**
a) $1/10^{th}$ of the rated capacity of the battery
b) $1/20^{th}$ of the rated capacity of the battery
c) $1/5^{th}$ of the rated capacity of the battery
d) $1/30^{th}$ of the rated capacity of the battery

42. Initial charge of the battery is **[c]**
a) $1/10^{th}$ of the rated capacity of the battery
b) $1/20^{th}$ of the rated capacity of the battery
c) $1/30^{th}$ of the rated capacity of the battery
d) $1/5^{th}$ of the rated capacity of the battery

43. Batteries are provided in Train coach to provide **[a]**
a) Amenities to public such as lights and fans
b) Separate excitation of alternator field
c) Self excitation of alternator field
d) None of the above

44. Number of mono block batteries used in 110 V TL systems **[a]**
a) 18 b) 12
c) 24 d) 9

45. Over charge results in **[d]**
a) Higher temperature of electrolyte b) Corrosion of plates
c) Oxidation of the seperators and loss of water d) All the above

46. Undercharging results in **[d]**
a) Irreversible Sulphation b) Reversal of cells
c) Loss of the capacity d) All the above

47. Reverse polarity is mainly due to **[a]**
a) Deep discharge b) RR Unit setting is high
c) Battery kept in fully charged condition d) None

48. Excessive gassing and high SPGR. **[a]**
a) Alternator/regulator setting high b) Alternator/regulator setting low
c) Lack of electrolyte d) None

49. Hydrometer used in TL system is **[a]**
a) Syringe type hydro meter b) Suction hydrometer
c) Both a and b d) None of the above

50. If water consumption in particular cell is more due to **[d]**
a) Hermitically sealed joint leak b) Higher charging current
c) Leakage of electrolyte due to cracks in container d) All of the above

51. Initial charging rate of lead acid battery is **[c]**
a) 0.1XC10 capacity b) 0.2XC10 Capacity
c) 0.5XC10 Capacity d) 0.033XC10 capacity

52. TL 110 V TL coaches are provided with following batteries **[a]**
a) Mono block batteries b) Individual cells
c) Both a & b d) None

53. Best quality of treated water conductivity is in micro mhos/cm **[a]**
a) <10 b) <35
c) <40 d) None

54. Best quality of treated water PH Value will be **[a]**
a) 6.8 to 7.2 b) 7.5 to 8.5
c) 8.5 to 10 d) None

2. INVERTER

1. Inverters convert **[b]**
   a) AC into DC
   b) DC into AC
   c) Both a & b
   d) None

2. In 25 KVA inverter the 3 phase AC supply is achieved by boosting DC Voltage 100/140 volts into **[b]**
   a) 230V DC
   b) 650V DC
   c) 415V DC
   d) None

3. Out put PWM voltage of inverter section of 25 KVA inverter of RMPU AC coach is **[d]**
   a) 650VDC
   b) 220VDC
   c) 24V DC
   d) 3 phase 415 V AC

3.ALTERNATOR AND RRU

1. Alternator is a device that converts [a]
   a. Mechanical energy into electrical energy
   b. Electrical energy into mechanical energy
   c. Chemical energy into electrical energy
   d. None of the above

2. Both field winding and 3 phase winding of AC coach alternator 120V are provided on _____ [a]
   a. Stator
   b. Rotor
   c. Both a and b
   d. None

3. TL/AC coach alternator 120V designed to have _____ [a]
   a. Residual magnetism
   b. Permanent magnetism
   c. Both a and b
   d. None of the above

4. Recommended Cut in speed of 4.5 KW TL alternator is by RDSO with MA RR unit _____ [a]
   a. 357 rpm
   b. 600 rpm
   c. 1100 rpm
   d. 2500 rpm

5. Minimum speed for full output of 4.5 KW 120V TL alternator, recommended by RDSO is ___ [b]
   a. 357 rpm
   b. 600 rpm
   c. 1500 rpm
   d. 2500 rpm

6. Maximum speed of TL/AC coach alternator is [d]
   a. 400 rpm
   b. 800 rpm
   c. 1500 rpm
   d. 2500 rpm

7. Field coils of 120V TL/AC coach alternator are connected in [a]
   a. Series
   b. Parallel
   c. Star
   d. Delta

8. Three phase windings of 120V TL/AC coach alternator are connected in [a]
   a. Star
   b. Delta
   c. Series
   d. Parallel

9. Size of V belts used for driving 110V 4.5KW TL alternators [a]
   a. C122
   b. C118
   c. C124
   d. None

10. Size of V belt used for driving 110V, 18, 22.5KW AC coach Alternators [a]
    a. C122
    b. C118
    c. C124
    d. None

11. Number of V belts used for driving 110V 4.5KW TL alternator is _____ [a]
    a. 4
    b. 6
    c. 12
    d. None

12. Number of V belts used for driving 110V 18KW & 25KW AC alternator is _____ [c]
    a. 4 c. 12
    b. 6 d. None
13. DC output voltage of Alternator /Regulator of 110V TL/AC coach is [a]
    a. (110-140) DC c. (90-120) DC
    b. (70-90) DC d. None
14. Rated DC output current of 4.5KW 110V Alternator is _____ [a]
    a. 37.5A c. 43A
    b. 19A d. None
15. Rated DC output current of 18KW 110V Alternator is _____ **[c]**
    a. 193A c. 135A
    b. 175A d. None
16. Rated DC output current of 25KW 110V Alternator is _____ **[a]**
    a. 193A c. 135A
    b. 175A d. None
17. Pitch circle diameter of Axle pulley of 110V TL system **[c]**
    a. 200mm c. 572.6mm
    b. 140mm d. None
18. Pitch circle diameter of Axle pulley of 110V AC coach system **[c]**
    a. 200mm c. 572.6mm
    b. 584mm d. None
19. As per the latest SMI, the voltage setting of alternator 4.5KW 110V for passenger train with flooded batteries is _____ **[c]**
    a. 127V DC c. 128.5V DC
    b. 124V DC d. None
20. As per the latest SMI, the voltage setting of ac alternator 18KW 110V with flooded batteries is**[c]**
    a. 129V DC c. 128V DC
    b. 124V DC d. None
21. As per the latest SMI, the voltage setting of alternator 4.5KW 110V for passenger train with VRLA batteries is _____ **[b]**
    a. 123+/-0.5V DC c. 121+/-0.5V DC
    b. 128.5+/-0.5V DC d. None
22. As per the latest SMI _____the voltage setting of alternator 4.5KW 110V for mail/express trains with VRLA batteries is _____ **[b]**
    a. 123+/-0.5V DC c. 121+/-0.5V DC
    b. 128.5+/-0.5V DC d. None
23. As per the latest SMI the voltage setting of alternator 4.5KW 110V for super fast trains with VRLA batteries is _____ **[b]**
    a. 123+/-0.5V DC b. 128.5+/-0.5V DC

c. 121+/-0.5V DC
d. None

24. As per the latest SMI the voltage setting of AC coach alternator 110V for passenger train with VRLA batteries is _____ **[a]**
a. 128+/-0.5V DC
b. 127+/-0.5V DC
c. 126+/-0.5V DC
d. None

25. As per the latest SMI the voltage setting of AC coach alternator 110V for Mail/express train with VRLA batteries is _____ **[a]**
a. 128+/-0.5V DC
b. 127+/-0.5V DC
c. 126+/-0.5V DC
d. None

26. As per the latest SMI the voltage setting of AC coach alternator 110V for super fast train with VRLA batteries is _____ **[a]**
a. 128+/-0.5V DC
b. 127+/-0.5V DC
c. 126+/-0.5V DC
d. None

27. The purpose of TL&AC Alternator used in Railways. **[d]**
a. Charging the coach battery on train run
b. Working of lights and fans in the coach during train run
c. Sharing the load to other coaches in case of emergency
d. All the three above

28. The capacity of alternator used for BG coach 110V Train Lighting system. **[b]**
a. 3KW
b. 4.5KW
c. 12KW
d. None

29. The capacity of alternator used for BG coach 110V roof mounted AC coach **[c]**
a. 12KW
b. 18KW
c. 25KW
d. None

30. The capacity of alternator used for BG coach 110V under slung AC caoch. **[c]**
a. 25KW
b. 12KW
c. 18KW
d. None

31. The PCD (pitch circle diameter) of 25KW 110V alternator pulleys is **[b]**
a. 584mm +/- 0.4mm
b. 200+/-0.3 mm
c. 100 mm
d. None

32. The field resistance of 4.5KW 110V TL alternator has **[a]**
a. 4.5 +/-0.5 ohms
b. 6.0+/-0.5 ohms
c. 10+/-0.5 ohms
d. None

33. The resistance between two phases of 4.5KW 110V TL alternator is **[a]**
a. 0.4 +/-0.05 ohms
b. 0.8 +/-0.10 ohms
c. 4.5 +/-0.5 ohms
d. None

34. The purpose of providing anti rotating clamp near suspension arrangement of alternator is **[d]**
   a. Not to rotate suspension pin of alternator
   b. Not to damage the nylon bushes of alternator/ suspension bracket
   c. Not to damage the suspension bracket/boss of alternator
   d. All of the above

35. The insulation material recommended for alternator windings of 4.5 KW 110V shall be _____ class. **[c]**
   a. A
   b. B
   c. F
   d. None

36. The voltage setting of Alt/RR unit is to be set in far with current and RPM for 4.5KW is **[a]**
   a. Half rated capacity of the alt as load as 1500 RPM
   b. ¼ rated capacity of the alt as load at 1000 RPM
   c. Full rated capacity of alt as load at 2550 RPM

37. While measuring insulation resistance of 110V alternator/rectifier cum regulator the rating of megger is to be used is **[b]**
   a. 100V DC megger
   b. 500V DC megger
   c. Both a nad b
   d. None

38. The resistance between two phase of 25KW KEL alternator is about **[a]**
   a. 0.0530746 ohms
   b. 0.034 to 0.038
   c. 44.2 mille ohms
   d. None

39. The field resistance of 25KW KEL alternator about **[a]**
   a. 9.7568 ohms
   b. 8+/-0.5 ohms
   c. 10.72 ohms
   d. None

40. The gap between two halves of axle pulley to be maintained is **[a]**
   a. 3.0 +/-0.5 mm
   b. 6mm +/- 0.5 mm
   c. 4mm +/- 0.5 mm
   d. None

41. Codal life of 4.5, 18, & 25 KW alternator / RR unit **[a]**
   a. 12 years
   b. 25 years
   c. 15 years
   d. None

42. Codal life of 120 AH VRLA Battery **[b]**
   a. 5 years
   b. 4 years
   c. 3 years
   d. None

43. Codal life of 120 AH Flooded Battery **[b]**
   a. 5 years
   b. 4 years
   c. 3 years
   d. None

44. Codal life of Battery charger **[a]**
   a. 12 years
   b. 15 years
   c. 25 years
   d. None

45. Codal life of Coach wiring **[b]**
a. 12 years
b. 15 years
c. 20 years
d. None

46. Codal life of Carriage fans **[a]**
a. 10 years
b. 12 years
c. 15 years
d. None

47. The distance to be maintained while fixing axle pulley on wheel, from wheel hub to axle pulley outer wedge for 25 KW alternator is **[a]**
a. 225 mm
b. 240 mm
c. 145 mm
d. None

48. The distance to be maintained while fixing axle pulley on wheel, from wheel hub to axle pulley outer wedge for 18 KW alternator is **[b]**
a. 225 mm
b. 240 mm
c. 145 mm
d. None

49. The distance to be maintained while fixing axle pulley on wheel, from wheel hub to axle pulley outer wedge for 4.5 KW alternator is **[c]**
a. 225 mm
b. 240 mm
c. 145 mm
d. None

50. 'V' belt dropping/smoking/burning due to mechanical failure **[c]**
a. Brake block jamming
b. Guide cups of damper's have dropped
c. Both a and b
d. None

51. 'V' belt dropping/smoking/burning due to electrical failure **[d]**
a. Load on Alt is heavy
b. Wrong alignment
c. Loose/excessive tension
d. All of the above

52. The minimum insulation resistance to be maintained for 4.5KW alternator is **[b]**
a. 1 Mega ohm
b. 2 Mega ohm
c. 20 Mega ohm
d. None

53. The minimum insulation resistance to be maintained for 18 & 25 KW alternators **[b]**
a. 20 mega ohm
b. 2 Mega ohm
c. 5 Mega ohm
d. None

54. No. of ET's used in 25 KW RR Unit MA type **[c]**
a. 2
b. 1
c. Zero
d. None

55. No. of MA's used in 25 KW MA type RR Unit **[a]**
a. 2
b. 1
c. Zero
d. None

56. Width of grooved axle pulley of 4.5KW alternator is **[c]**
   a. 200mm
   b. 190mm
   c. 136mm
   d. None

57. Width of grooved axle pulley of 18 and 25 KW alternator is **[a]**
   a. 200 mm
   b. 190 mm
   c. 136 mm
   d. None

58. The type of suspension bushes are to be provided TL/AC alternators/ suspension bracket as per RDSO specification no RDSO / PE/Ac/0006/99 (Rev.0) **[b]**
   a. Cast nylon bushes
   b. Nylon 66 bushes
   c. MS bushes
   d. All of the above

59. Residual magnetism lost in the alternator core the reason is **[c]**
   a. Field polarity changed
   b. Alternator is in idle condition for long time
   c. Both a and b
   d. None of the above

60. As per the Railway Board letter No. 2006/Elec(G)/138/3Pt. I unit Exchange spare recommended for alternators and Regulators for TL/AC depot **[a]**
   a. 5%
   b. 10%
   c. 15%
   d. None

61. ERRU stands for **[a]**
   a. Electronic Rectifier cum Regulator Unit
   b. Electromagnetic Rectifier cum Regulator unit
   c. Electrostatic Rectifier cum Regulator Unit
   d. None

62. IGBT stands for **[a]**
   a. Insulated Gate Bipolar Transistor
   b. Injection Gate Bipolar Transistor
   c. Indicator gate Bipolar Transistor
   d. None

63. IGBT is**[a]**
   e. Fast switching device
   f. Slow switching device
   g. Very fast switching device
   h. None

64. The size of capacity of fuses to be provided for 25kW ERRU in phase circuit **[b]**
   a. 160A
   b. 200A
   c. 220A
   d. None

65. UVC used in ERRU must be **[a]**
   a) Suitable to work with all capacities
   b) Suitable to work with all makes
   c) Both a and b
   d) None

66. The battery charging current limit with 4.5kW ERRU is to be set at **[a]**
   a. 24A +/-2A
   b. 12A +/- 2A
   c. 36A +/- 2A
   d. None

67. TL alternator 4.5 KW 130 V is_____ **[a]**
   a) 4 V belts drive machine
   b) 6 V belts drive machine
   c) 12 V belts drive machine
   d) None of the above

68. Non drive end bearing of 4.5 kw 120v 4.5kw TL alternator is__ **[a]**
   a) SKF 6309 b) SKF NU311 c) SKF 6200 d)None

69. Driving end bearing of 4.5 kw 120 V 4.5 kw TL alternator is_____ **[b]**
   a) SKF 6309 b) SKF NU311 c) SKF 6200 d)None

70. Field coils of TL coach alternators are located on **[a]**
   a) Stator b) Rotor c) Both a and b d) None

71. Each field coil of TL/AC coach alternator embraces _____ total number of there phase winding slots. **[a]**
   a) Half of the
   b) One fourth of the
   c) Three fourth of the
   d) None

72. Numbers of alternator pulleys are available on 4.5 kw TL Alternator. **[a]**
   a) 1 b) 2 c) 3 d) None

73. Numbers of Alternators pulleys are available on BG AC coach Alternator. **[b]**
   a) 1 b) 2 c) 3 d) None

74. Residual magnetism retains in _____ **[b]**
   a) Rotor core b) Stator Core c) Rotor teeth d) None

75. Number of slots are available in stator for 3Phase ac winding in 4.5 KW 120V Alternator **[a]**
   a) 36 b) 60 c) 18 d) None

76. 3 Phase AC voltages are first produced in ac winding in Alternator by **[a]**
a) Residual magnetism b) Permanent magnetism
C) Both a and b d) None

77. When the rotor of 4.5 kw 120V alternator is rotated by hand the voltage developed in the 3 phase winding will be **[a]**
a) 3.5 v b) 12v c) 24v d) None

78. DC output voltage of Alternator/Regulator of 110 V TL/AC coach is **[a]**
a) (110-140) DC b) (70-90) DC c) (90-120) DC d)None

79. Rated DC output current of 4.5 kw 110v Alternator is **[a]**
a) 37.5A b) 19A c) 43A d)None

80. Rated DC output current of 25kw 110v Alternator is **[a]**
a) 193A b) 175A c) 135A d)None

81. As per the latest SMI, the voltage setting of alternator 4.5kw 110v for **[a]**
Express/ mail trains with flooded batteries is _____
a) 128.5v DC b) 124v DC c) 122v DC d)120v DC

82. The purpose of TL Alternator used in Railways **[d]**
a) Charging the coach battery on train run
b) Working of lights and fans in the coach during train run
c) Sharing the load to other coaches in case of emergency
d) All the above

83. The purpose of Ac coach Alternator used in Railways **[d]**
a) Charging the coach battery on train run
b) Working of lights and fans in the coach during train run
c) Sharing the load to other coaches in case of emergency
d) All the above

84. Number of Alternators are provided for AC sleeper, AC chair car, **[b]**
AC composite coach
a) 1 b)2 c)3 d)None

85. The AC winding/ Main winding of TL/AC coach alternator has _____ **[c]**
phase winding
a) Single b) Double c) Three d) None

86. The safety items of TL/AC alternator are **[a]**
a) Suspension hanger pin with bushes and Cottar Pin
b) Alternator Suspension arrangement
c) Alt pully & nut
d) All the above

87. NU 311 bearing is **[a]**
a) Roller bearing
b) Ball bearing
c) Both a and b
d) None

88. MA type RR units are working on the principle **[a]**
a) Saturation and de saturation of magnetic core
b) Mutual induction
c) BJT
d) None

89. Generally the voltage setting of the alternator is to be set at_____ **[b]**
At 1500rpm
a) Full rated current
b) Half rated current
c) 2/3rd rated current
d) None

90. Both directions of train run, the polarity of Dc output supply of TL/AC alternator **[b]**
a) Changes b)Do not change c)Change at start d) None

91. The mating of pulley with shaft of TL/AC alternator shall be **[a]**
a) 80% b) 70% c) 60% d)50%

92. The cleat of alternator is to be made of **[a]**
a) Fibre glass in forced fire retardant DNC
b) Bakelite
c) Phenolicd
d) None

93. Rotor shaft of KEL 110v 4.5kw alternator made up of **[a]**
a) EN 24 b) EN 8 c)Both a and b d)None

94. Type of suspension bushes to be used while mounting alternators **[b]**
as per latest RDSO instructions are
a) Cast Nylon b)Nylon 66 c)MS d)None

95. The insulation resistance of alternator when measured with megger **[a]**
the IR value should not be less than
a) 20 mega ohms b)5 mega ohms c)both a and b d)None

96. In case of over voltage in 4.5kw 120v RR unit, the tripping voltage **[a]**
of relay may be set at
a) 145+/-2 b) 150+/-2 c) 135+/-2 d)None

97. The number of safety chains provided for 18kw and 25kw alternator **[b]**
a) 2 b) 3 c) 4 d)None

98. The cut in speed of 25kw alternator is not more than **[b]**
a) 400rpm b) 600rpm c) 800rpm d)None

99. The MFO of 25 kw alternator is not more than **[c]**
a) 400rpm b) 600rpm c) 800rpm d)None

100. The field resistance of 25 kw KEL alternator about **[a]**
a) 9.7568 ohms b) 8 +/-0.5 ohms c) 10.72 ohms d)None

101. To prevent breakage of shaft during service the following test should be Done as per RDSO SMI **[a]**
   a) Non destruction dye-penetrate test
   b) Shock pulse meter test
   c) Ultrasonic test
   d) None

102. The gap between two halves of axle pulley to be maintained is **[a]**
   a) 3.0mm+/- 0.5mm b)6mm +/- 0.5mm c)4mm +/-0.5mm d) None

103. Before lifting coach body, the following electrical items as to be removed, otherwise coach body will not separate from trolley **[d]**
   a) Belt tensioning mechanism
   b) V Belts
   c) Alternator cables
   d) All the above

104. Rating of AC fuses to be provided in 25kw MA type RR unit **[b]**
   a) 125A HRC b) 160A HRC c)Either a or b d)None

105. The rating of field fuse to be provided in 4.5kw 110v HMTD MA type RRU **[a]**
   a) 6A b)2A c)4A d)None

106. Field resistance of 25 kw alternator **[a]**
   a) 9.75 ohms b)4.5 ohms c)10 ohms d) none

4. ERRU

01. Voltage regulation of alternator with ERRU for all capacities of alternator. **[c]**
a)+/-5% b)+/-3% c)+/-2% d) None

02. Voltage ripples of output supply with ERRU should be less than **[a]**
a)2% b)5% c)15% d)none

03. ISO pack power diode modulars are used for converting **[a]**
a)AC to DC b) DC to AC c) both A&B d) none

04. The advantage of ISO pack power modules are **[d]**
a) Directly can mount on heat sink
b) two diode combined unit
c) Small in size
d) all of the above

05. The ERRU shall have the following protection **[d]**
a) Over voltage/surge protection b) DC output short circuit protection
c) Over charging current limit protection d) all of the above

06. UVC used in ERRU must be **[a]**
a) Suitable to work with all capacities b) suitable to work all makes
c) Both A&B d) none

07. The over voltage setting of OVP with ERRU should be set at **[a]**
a)140-145V b)125-130V c)135-140V d)none

08. The battery charging current limit with 4.5 KW ERRU is to be set at **[a]**

a) 24A +/-2A b)12A +/-2A c)36A +/-2A d) none

09. The battery charging current limit with 25kw ERRU when both alternators are paralleled is to be set at **[a]**
a) 110A +/-5A b)220A +/-5A c)220A +/-10A d)none

10. OVP provided with ERRU shall latch before output voltage reachs to **[c]**
a) 145V b) 150V c) 135V+/-2V d) none

11. Hall senses are used to sense **[c]**
a) Total alternator load current b) battery charging current
c) both A&B d) none

12. OVP is provided in ERRU for the purpose of **[c]**
a) To arrest the over voltage
b) latch the output voltage 90V for working lights and fans
c) Both A&B
d) none

13. PWM stands for **[a]**
a) Pulse width modulation b) phase width modulation
c) both A&B d) none

14. EEPROM stands for **[a]**
a) Electrically erasable programmable read only memory
b) Electronically erasable programmable read only memory
c) Both A&B d) none

15. SMPS stands for **[a]**
a) switch mode power supply b) single mode power supply
c) sweep mode power supply d) none

16. IGBT stands for **[c]**
a) Insulated gate bipolar transistor
b) isolated gate bipolar transistor
c) Both A&B
d) none

4. Railway carriage fans

01. Air delivery of fan can be measured by **[a]**
a) Anemometer b) ammeter c) luxmeter d) none

02. When insulation resistance test is carried out on railway carriage fan it's insulation resistance should not be less than **[c]**
a)20mega ohms b)10mega ohms c)2mega ohms d)none

03. The wattage of 110V DC 400mm sweep RC fan is **[a]**
a)32w b)25w c)19W d)none

04. The wattage of 110V DC 300mm RC fan is **[b]**
a)32w b)25w c)19W d)none

05. Voltage drop between battery and any of the farthest fan shall not exceed ____volts at battery voltage of 108v **[b]**
a) 5 b) 3 c) 1 d) none

06. Codal life of RC fan is **[a]**
a) 10 years b)12 years c) 4 years d) none

07. Input power of 110V BLDC 400mm sweep fan of CGL make **[a]**
a)24w b) 38w c)32w d)none

6.TL coach wiring

01. Capacity of rotary switches provided in rotary junction box is **[a]**

a)40A b)16A c)10A d)15A

02. Capacity of limit switch provided for alarm chain pulling indication light circuit **[a]**

a) 10A b)15A c)35A d)40A

03. Size of rewirable fuse recommended for individual fan in 110V TL system is **[a]**

a)35 SWG R/W b) 29 SWG R/W c)20 SWG R/W d) 22 SWG R/W

04. Positive and negative cable in roof runs through on either side of coach to avoid **[c]**

a) earth leakage b) over load c) short circuits d) none

05. Essential lights in SG TL coaches other than First class consists of **[a]**

a) Lavatory lights, door way lights and Night lights and 50% of compartment lights

b) Lavatory lights

c) Lavatory and door lights

d) Lavatory, door lights and Night lights

06. The wattage of TL Fan **[a]**

a) 32W b)10W c)80W d)60W

07. The capacity of battery fuse for 110Volt SG TL coach is **[a]**

a) 40A HRC b) 16A HRC c) 10 A HRC d)4 A HRC

08. FRP tray shall be provided at the bottom of the battery box to avoid **[d]**

a) Corrosion of the battery box from splitting of acid

b) Electrical insulation for battery and battery box

c) Vibration of batteries

d) all of the above

09. The minimum clearance between the top of the battery and battery box for maintenance of cells shall have **[b]**

a)50mm b)150mm c)100mm d)none

10. The size of the Fan provided on SGBG coaches of 110V system **[a]**

a)400mm sweep b)300 mm sweep c)225 mm sweep d)200 mm sweep

11. The total number of V belts provided to the drive TL alternator 4.5KW are **[a]**

a) 4 b)6 c)2 d)3

12. The train lighting wiring is **[b]**

a) two wire earthed system b) two wire unearthed system

c) one wire earthed system d)none of the above

13. The insulation resistance of 110V coach when measured with 500V Megger during healthy weather condition **[a]**

a) 2mega ohms b) 1 mega ohmsc)3 mega ohms d)0.5 mega ohms

14. The insulation resistance of 110V coach when measured with 500V Megger during adverse weather condition **[b]**

a) 2mega ohms b) 1 mega ohms c)3 mega ohms d)none

15. Electrical fires on coach is mainly due to **[d]**

a) loose connections b)short circuits and earth faults

c) undersize cables d) all of the above

16. The earth leakage can be checked both positive and negative cables at a time by **[a]**

a) double test lamp method b) 500V megger

c) single test lamp d)none of the above

17. Double test lamps are connected in **[a]**

a)series b) parallel c) both a&b d)none

18. When double test lamp is connected to EFTB, red lead connected lamp glows and blue lead lamp does not glow then coach is **[c]**

a) healthy b)having positive earth c)having negative earth d) none

19. When double test lamp is connected to EFTB, red lead lamp does not glows and blue lead lamp glows then coach is **[b]**

a) healthy b)having positive earth c)having negative earth d) both B&C

20. The insulation resistance of coach is to be measured with **[a]**

a) megger b)ohm meter c)continuity meter d)none

21. The instrument used to measure the current without disturbing the circuit is **[a]**

a) tong tester b) tacho meter c) photo meter d)none

22. Voltmeter is to be connected to the circuit in **[a]**

a)parallel b)series c)series and parallel d)none

23. Ammeter is to be connected to the circuit in **[b]**

a)parallel b)series c)series and parallel d)none

24. While measuring the earth leakages by double test lamp, lamps should have **[a]**

a) same wattage b) different wattage c)any wattage d)none

25. While giving supply to adjacent coaches through EFT the supply polarities are to be maintained **[a]**

a)same polarity b)opposite polarity c)any polarity d)none

26. No generation of TL alternator is due to **[d]**

a) alternator Field/AC wire defective b) no residual magnetism

c) rectifier /regulator box defective d)any of the above

27. Cables used for wiring in coaches should have **[a]**

a) Minimum joints b) five joints c) maximum joints d) none

28. The level of illumination will be measured by **[c]**

a)photo meter b)lux meter c)both A&B d)none

29. The percentage of spare coaches should be available in TL maintenance depot on traffic account is **[b]**

a) 10 b) 5 c) 6 d) none

30. The percentage of spare coaches should be available in AC maintenance depot on traffic account is **[c]**

a) 12 b) 5 c) 6 d) none

6.AIR CONDITIONING

1. The purpose of evaporator is (c)
   a. To absorb heat from coach and to send cooled air in to the coach.
   b. To convert liquid refrigerant into vapor
   c. Both (a) and (b)

2. The purpose of evaporator is (a)
   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 vapor into liquid
   d. To control and pump the refrigerant to the cooling coil.

3. The purpose of compressor is (b)
   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 to boost the temperature and pressure of refrigerant
   c. To reject the heat of refrigerant to the water and air and to convert refrigerant vapor into liquid
   d. To control and pump the refrigerant to the cooling coil.

4. The purpose of condenser is to (c)
   a. To absorb heat from the coach and send cooled air in to the coach
   b. To draw refrigerant vapor from the cooling coil and to boost the temperature and pressure of refrigerant
   c. To reject the heat of refrigerant to the water of air and to convert refrigerant vapor in to liquid
   d. To control an pump the refrigerant to the cooling coil

5. The purpose of expansion valve is **(d)**
   a. To absorb heat from the coach and send cooled air in to the coach
   b. To draw refrigerant vapor from the cooling coil and to boost the temperature and pressure of refrigerant
   c. To reject the heat of refrigerant to the water of air and to convert refrigerant vapor in to liquid
   d. To control an pump the refrigerant to the cooling coil

6. The purpose of liquid receiver is (d)
   a. It carries the low pressure vapor from the evaporator to the suction inlet of the compressor
   b. It conveys the high pressure and high temperature refrigerant from the compressor to the condenser
   c. It carries the liquid refrigerant from the liquid receiver and conves it to the expansion valve
   d. It acts as a reservoir which stores the liquid refrigerant coming from the condenser and supplies it to the cooling coil according to its requirement

7. The relative humidity for the human comfort zone is (a)
   a. 40 - 60% b. 80 - 100% c. 20 - 40% d. None

8. The cooling temperature during summer mostly preferred by passengers in Railway AC coaches is single setting is (a)
   a. 23 to 25 C b. 19 to 21 C c. 26 to 28 C d. None

9. The heating temperature during winter proffered by passengers in Railway AC coaches is single setting is
   a. 23 to 25 C b. 19 to 21 C c. 26 to 28 C d. None (b)

10. The air conditioning system used in Railway coaches is (a)
   a. Vapor compressor system b. Circulation of cold water system
   c. Ice activated system d. All of the above

11. The purpose of compressor in vapor compressor system is (c)
   a. It extracts refrigerant gas from the evaporator coil at low pressure
   b. it compresses low temperature and low pressure gas and delivers to the condenser at high pressure and high temperature
   c. Both (a) and (b)

12. The purpose of dehydrator and filter used in vapor compression system is (c)
   a. It removes moisture available in refrigerant system
   b. It prevents particles and scales in refrigerant system
   c. Both (a) and (b) d. None

13. The purpose of high pressure cut out used in vapor compressor system is (c)
   a. It stops the compressor if the pressure exceeds the pre set value
   b. It protects the compressor and piping from damage
   c. Both (a) and (b) d. None

14. The purpose of condenser used in vapor compressor system is (c)
   a. It cools the high pressure hot gas received from the compressor.
   b. It converts high pressure gas into liquid
   c. Both (a) and (b) d. None

15. The purpose of expansion valve/capillary tube used in vapor compression system is (c)
   a. It controls the rate flow of high pressure refrigerant liquid
   b. It allows refrigerant liquid to evaporator at low pressure
   c. Both (a) and (b) d. None

16. The purpose of the evaporator (cooling coil) used in vapor compression system is (c)
   a. It evaporates refrigerant liquid by absorbing heat from surrounding areas
   b. It cools surrounding area
   c. Both (a) and (b) d. None

17. Formula for converting centigrade into foreign heat (b)
   a. 5/9 (F-32) b. 9/5 (C +32)
   c. 9/5 (F-32) d. 5/9 (C +32)

18. Formula for converting foreign heat into centigrade (a)
   a. 5/9 (F-32) b. 9/5 (C +32)
   c. 9/5 (F-32) d. 5/9 (C +32)

19. The normal body temperature of human being is (c)
   a. 37 C b. 98.6 F c. Both (a) and (b) d. None

20. The danger for the human body, if the temperature fails below (a)
   a. 98 F b. 98.6 F c. 105.6 F d. None

21. The danger for the human body, if the temperature fails below (a)
a. 36.5 C b. 37 C c. 40.5 C d. None

22. The danger for the human body, if the temperature increase above (a)
a. 40.5 C b. 37 C c. 36.5 C d. None

23. The danger for the human body, if the temperature increase above (c)
a. 98 F b. 98.6 F c. 105.6 F d. None

24. If the relative humidity is below 30% the result will be (c)
a. Mucous membranes b. Skin surface becomes too dry
c. Both (a) and (b) d. None

25. If the relative humidity is above 70% the result will be (c)
a. Clammy sensation b. Sticky sensation
c. Both (a) and (b) d. None

26. For summer air conditioning the relative humidity should not be more than (b)
a. 40% b. 60% c. 75% d. 90%

27. For winter air conditioning the relative humidity should not be less than (a)
a. 40% b. 60% c. 75% d. 90%

28. The duct is made of (e)
a. Galvanized Iron b. Aluminum
c. Fiber glass d. Cement asbestos
e. Any one of the above

29. Capillary tube id used in (a)
a. Hermitically sealed units b. Open type AC units
c. Semi open type AC units d. None

30. An evaporator is also known as (d)
a. Freezing coil b. Cooling coil
c. Chilling coil d. All of the above

31. Evaporator is also known as (d)
a. Freezing coil b. Cooling coil
c. Chilling coil d. All of the above

32. Condenser is used in the _____ pressure side of the refrigerant system (b)
a. Low b. High c. Medium d. None

33. The highest temperature in a vapor compressed system occur after (a)
a. Compressor b. Condensation
c. Expansion d. Evaporation

34. The lower at temperature in vapor compressed system occur after (b)
a. compressor b. Condenser
c. Expansion valve d. Evaporator

35. Dry bulb temperature is (a)
a. The temperature indicated by a temperature with a clean, dry sensing element that is shielded from radiation effects.

b. The temperature measured by a thermometer with its bulb covered by a wick wetted with distilled water exposed to a current of rapidly moving air.
c. An arbitrary index of the degree of warmth or cold felt by the human body in response to a combinationof the temperature, humidity and movement of air
d. None

36. Wet bulb temperature is (b)
a. The temperature indicated by a thermometer with a clean, dry sensing element that is shielded from radiation effects
b. The temperature measured by a thermometer with its bulb covered by a wick wetted with distilled water exposed to a current of rapidly moving air,
c. An arbitrary index of the degree of warmth or cold felt by the human body in response to a combination of the temperature, humidity and movement of air
d. None

37. The air conditioning system depends on its action on the (c)
a. Latent heat principle b. Expansion principle
c. Both (a) and (b) d. none

38. Latest heat principle is (c)
a. Any substance is passing from the liquid to gaseous state absorbs a specific quantity of heat at constant temperature.
b. Any substance is passing from the gaseous to liquid state gives up a specific quantity of heat at constant temperature.
c. Both (a) & (b)
d. None.

39. Latest heat principal is applied for (c)
a. Evaporator b. Condenser
c. Both (a(& (b) d, None

40.Psychometric chart is (d)
a. The fundamental tool of air conditioning engineer.
b. The science involving thermo dynamic properties of moist air
c. The changes occurring in humid air when it is subjected to various air conditioning process can be traced.
d. All the above.

41. Psychometric chart shows relationship between (f)
a. Dry bulb temperature b. Wet bulb temperature
c. Dew point temperature d. Humidity
e. Total heat (enthalpy) f. All the above.

42. Refrigerant used in air condition should be (d)
a. Non-irritating b. non-poisonous
c. Non-inflammable d. All the above.

43. Refrigerant used in air condition system should not have (c)
a. Corrosive action b. Disagreeable odor
c. Both (a) & (b) d. None

44. Refrigerant used in air condition system (d)
a. Leak detection should be easy and simple.
b. Latent heat of vaporization should be large.
c. The volume of vapor for given weight should be slightly above atmosphere
d. All the above.

45. The refrigerant used in AC system (d)
a. Must be capable of being liquefied at condensing temperature.
b. Must not solidify at any temperature with in the range of working.
c. The vapor pressure should be slightly above atmosphere.
d. All the above.

46. The purpose of air condition is (e)
a. Temperature control b. Humidity control
c. Air movement and circulation d. Air filtering, cleaning and purification
e. All the above.

47. The range of temperature for year round human comfort is (a)
a. 22.8º to 25ºC b. 27º to 29ºC
c 15º to 17ºC d. None.

48. The range of air motion for year round human comfort is (a)
a. 5m/min to 8m/min b. 15m/min to 20m/min
c. 25m/min to 8m/min d. None.

49.The unit for the capacity of air conditioning is in (a)
a. Ton of refrigeration b. Kilograms
c. Founds d. None

50. One ton of refrigeration is equal to (a)
a. 288000 Btu/24 hr b. 144000 Btu/ 24 hr
c. 72000 Btu/ 24 hr d. None.

51. One ton of refrigeration is equal to (a)
a. 12000 Btu/ hr b. 6000 Btu/ hr
c. 2000 Btu/ hr d. None.

52. One ton of refrigeration is equal to (a)
a. 200 Btu/ min b. 100 Btu/ hr
c. 50 Btu/ hr d. None.

53. One ton of refrigerant equals to (c)
a. 72000 Kcal/ 24 hrs b. 288000 BTU/24 Hrs
c. Both (a) & (b) d. None.

54. One ton of refrigerant equals to (c)
a. 3000 Kcal/ hrs b. 12000 BTU/ Hrs
c. Both (a) & (b) d. None.

55. One ton of refrigeration is equal to (c)
a. 50 Kcal/min b. 200 BTU for minute
c. Both (a) & (b) d. None.

56. One ton of refrigerant is (d)
a. A machine having its capacity to produce cooling effect of 200 BTU/min or 50 Kcal per min.
b. A machine having its capacity to procure cooling effect of 12000 BTU/ hours or 3000 Kcal/per Hrs.
c. Removes the heat at the rate of 3000 Kcal/hr or 50 kcal/min
d. All of the above.

57. Refrigerant is a (c)
a. Substance which is circulated in a refrigeration system to reject heat
b. Substance which is circulated in a refrigeration system to absorb heat
c. Both (a) & (b)
d. None.

58. R22, refrigerants comes under group of (a)
a. HCFC b.HFC
c. Both (a) & (b) d. None

59. 134a refrigerant comes under the group of (b)
a. HCFC b. HFC
C. Both (a) & (b) d. None

60. HCFC Stands for (a)
a. Hydro chloro, flouro carbon b. Halo chloroflouro carbon
c. Both (a) & (b) d. none

61. HCF Stands for (a)
a. Hydro flouro carbon b. halo flouro carbon
c. Both (a) & (b) d. none

62. The moisture in AC systems causes (e)
a. Corrosion b. Sludge
c. Amalgam d. Freeze-up
e. All the above.

63. Corrosion caused due to moisture in air condition systems results (a)
a. Damage the metallic components
b. Reduce the lubrication properties of the oil.
c. Increase the lubrication properties of the oil.
d. None

64. Sludge caused due to moisture in air condition system results (c)
a. Increase the lubrication properties of the oil.
b. Reduce the lubrication properties of the oil.
c. Blocks flow of refrigerant
d. None.

65. Amalgam caused due to moisture/water at capillary in AC system results (c)
a. Damage the metallic components
b. Blocks flow of refrigerant
c. Reduce the lubrication properties of the oil
d. none.

66. Freeze up caused due to moisture/water at capillary in AC system results.(c)
a. Damage the metallic components

b. Reduce the lubrication properties of the oil
c. Blocks flow of refrigerant
d. All of the above.

67. The moisture in the AC system can be eliminate by (b)
a. Blowing dry air/nitrogen through the system
b. Pulling vacuum through the system
c. Heating the system to high temperature, while pulling vacuum, simultaneously
d. All of the above.

68. The suction pressure of the system lower than the normal, the causes are (e)
a. An obstruction in the flow of system
b. Failure of blower fan, filters
c. Rate of flow of refrigerant in the system is low
d. Electronic thermostats are not functioning
e. All the above.

69. Suction pressure of the system is higher than the normal, the reasons may be (d)
a. Excess load on the evaporator b. Expansion value defective
c. Compressor speed low d. All the above

70. The cooling in the coach is not sufficient, the reasons may be (e)
a. Compressor not getting loaded/poor effiance
b. Too little gas or air may have accumulated in the system
c. Condenser, fresh/return filters, evaporator dirty/ choked
d. Setting of expansion value disturbed
e. All the above.

71. Purging means (a)
a. Expelling all the air in the system by admitting gas
b. admitting air into the system
c. Admitting refrigerant into the system
d. None.

72. Condenser head pressure is lower than the normal, the reason is (d)
a. Less gas in the system b. Gas leakage in the system
c. Expansion value/ evaporator/ Compressor suction strainer choked
d. All of the above.

73. Condenser head pressure is higher than the normal, the reason is (d)
a. Condenser fans are not working properly b. Air in the system
c. Excessive gas in the system d. All of the above.

74. Capillary tube is also called as (d)
a. Condenser b, Evaporator
c. Compressor d. Expansion value

75 The function of capillary tube is same as. (d)
a. Condenser b, Evaporator
c. Compressor d. Expansion value

7.RMPU COACHES

1. RMPU means (a)
   a. Roof mounted package unit b. Rail mounted package unit
   c. Rack mounted packaged unit d. None

2. Weight of the FEEDERS LLOYD RMPU is about (b)
   a. 2700 kg b. 620kg c. 700kg d. none

3. Weight of the SIDWAL RMPU is about (c)
   a. 2700 kg b. 620kg c. 700kg d. none

4. Installation time of RMPU is about (a)
   a. 4 hours b. 24 hours c. 48 hours d. None

5. Refrigerant is used in RMPU is (a)
   a. R22 b. R12 c. R134a d. None

6. Chemical name of R22 is (a)
   a. Mono chloro Difluoro methane CHCIF2 b.Dichlorodiflouro methane CCl2F
   c. Dichloromonoflour methane CHCl2F d. None.

7. Quantity of refrigerant to be Charged for one AC circuit of RMPU is about (a)
   a. About 3 Kgs b. About 20Kgs
   c. About 30KGS d. None

8. The type of compressor used in RMPU unit is (a)
   a. Heretically sealed b. opened
   c. Semi opened d. None

9. Potential leakage of RMPU unit is (a)
   a. Low b. Large c. Enormous d. none

10. Type of power supply to compressors and condenser and evaporator units of RMPU coach is (b)
   a. DC b. AC c. Pulsating DC d. None

11. Power supply is fed to compressors and condenser and evaporator units of RMPU coach is (b)
   a. 1 Phase 230V b. 3 phase 415 V c. 3 Phase 110V d. None

12. Maintenance of RM**P**U units is about (a)
   a. Little b. More c. Heavy d. None

13. Dust collection on RMPU units is about (a)
   a. Little b. More c. Heavy d. None

14. Damage due to cattle run for RMPU units is (a)
   a. NIL b. More c. Little d. None

15. Performance of RMPU unit is (c)
   a. Poor b. Satisfactory c. Excellent d. None

16 Technology of RMPU unit is (c)
   a. Old b. Obsolete C. Latest d. None

17. Water dropping on passengers due to RMPU units is (c)
a. Regularly b. Sometimes C. Nil d. None

18. Required fresh air for AC RMPU coach is taken from (a)
a. Roof of the coach b. Sides of the coach near toilets
c. Under frame of the coach d. None

19. Capacity control of RMPU is (b)
a. 50% to 100% b. 25% to 100% c. 75% to 100% d. None

20. Capacity in tons of refrigeration of RMPUs of AC sleeper coach (a)
a. 14 tons b. 10.4 tons c. 5.2 tons d. None

21. Capacity in tons of refrigeration of RMPUs of first class AC coach is (Single unit) **(c)**
a. 14 tons b. 10.4 tons c. 7 tons d. None

22. Wave form of AC of supply fed to RMPU unit (c)
a. Square b. Sine c. PWM d. None

23. Capacity in tons of refrigeration of one RMPU unit (c)
a. 14 tons b.5.2 tons c. 7 tons d. None

24. Number of Compressor are available in RMPU has (b)
a. 4 b. 2 c. 1 d. none

25. Number of Compressor are available in RMPU coach other than first class has (a)
a. 4 b. 2 c. 1 d. none

26. Number of RMPUS are available in all AC coach other than first class are (a)
a. 2 b. 1 c. 3 d. none

27. The power required for one RMPU is about (a)
a. 13 KW b. 5.75 KW c. 23 KW d. None

28. The current taken by the one RMPU unit is (b)
a. 40 A b. 22 A c. 10A d. None

29. The advantage of RMPU AC coach system is (g)
a. Less weight
b. Hermitically sealed compressor, no refrigerant leakage
c. Less space occupation d. Less maintenance and reliable
e. Consuming less power f. More Energy efficient
g. All of the above

30. Number of Condensers one RMPU has (b)
a. One b. Two c. Three d. None

31. Number of Blower Motor one RMPU has (a)
a. One b. Two c. Three d. None

32. Number of heater one RMPU has (b)
a. One b. Two c. Three d. None

33. RMPU is Fitted (a)
a. Above toilets in a roof b. Underneath the coach
C. Inside the coach d. None

34. The capacity of Compressor motor used in RMPU AC Coach is (a)
a. 5.25 kw b. 6.3 kw c. 4.3kw d. None

35. The capacity of Condenser motor used in RMPU AC Coach is (a)
a. 1 HP b. 1.5 HP c. 2.5 HP d. None

36. The capacity of crank case heater of compressors used in RMPU AC Coache (a)
a. 50 W b.150 W c. 200 W d. None

37. The capacity of evaporator fan motor used in RMPU AC Coach (a)
a. 1.5 HP b. 0.5 HP c. 2.5 HP d. None

38. Control panel load of RMPU AC Coaches is About (b)
a. 400 W b. 200 W c. 100 W d. None

39. The capacity WRA motor RMPU AC Coaches is (a)
a. 373 W/ 0.37 KW b. 500 W c. 200 W d. No

40. Heaters load of one RMPU is about (a)
a. 6 KW b. 3 KW c. 12KW d. None

41. Current taken by one compressor motor of RMPU of AC coach is (a)
a. 8.25+/-25 b. 2.6+/10% c. 2.2+/10% d. None

42. Current taken by one condenser fan motor of RMPU of AC coach is (c)
a. 8.25+/-25 b. 2.6+/10% c. 2.2+/10% d. None

43. Current taken by one evaporator fan motor of RMPU coache (b)
a. 8.25+/-25 b. 2.6+/10% c. 2.2+/10% d. None

44. Starting current taken by one compressor motor of RMPU coach in (b)
a.10A b. 49 A c. 15 A d. None

45. The RMPU coaches are manufactured by (f)
a).M/s.Fedders Lloyd b) M/s.Sidwal c. M/s.Intech d) M/s.AmitEngg f) All of the above

46. The control panel of RMPU coaches works on (b)
a. 230 V AC b. 110 V AC c. 440 V AC d. None

47. Speed of the condenser motor of RMPU coach is (a)
a. 910 RPM b. 720 RPM c. 2880RPM d. None

48. Speed of the evaporator fan motor of RMPU coach is (a)
a. 415 RPM b. 720 RPM c. 2880RPM d. None

49. The size of the FEDDER LLOID RMPU is about (a)
a. 2150 x2250x620 mm b. 1600 x1800x620 mm
c. 1400 x1500x620 mm d. None

50. The size of the SIDWAL RMPU is about (a)
a. 2150 x2250x620 mm b.1600 x1800x620 mm
c. 1400 x1500x620 mm d. None

51. 415 V 3 Phase AC supply required for operating motors of RMPU is fed from (b)
a. 25 KW Alternator b. 25 KVA inverter c. Both (a) and (b) d. None

52. The capacity of inverters used in RMPU coach is (b)
a. 18 KVA b. 25 KVA c.12 KVA d. None

53. No of inverters required for one RMPU coach are (a)
a. Two b. One c. Three d. Four

54. The input Voltage of 25 KVA inverter of RMPU coach (a)
a. 110/135 DC b. 24 V DC c.415 V AC d. None

55. The output Voltage of under slung/on board inverter of RMPU coach (a)
a. 415 VAC b. 230 VAC c. 110 VAC d. None

56. 110 V AC voltage required for operating control panel of RMPU AC Coach is stepped down from (b)
a. 750 V AC b. 415 V AC c. 220 V AC d. None

57. The wave form of 110V AC voltage fed to control panel of RMPU coach is (a)
a. Shine wave b. Square wave c. PWM wave d. None

58. PWM wave of 110V AC voltage of 25 KVA inverter is converted in to sine wave by_____ to feed to cooling fan of RMPU (a)
a. Shine filter b. COS filter c. Tan filter d. None

59. No of evaporator fan motors are available for one RMPU AC coach (a)
a. Two b. One c. Three d. Four

60. Approximate 1st Class AC load in terms of ton of refrigeration (a)
a. 5.3 tons b. 7.4 tons c. 11.1 tons d. None

61. Approximate Air Conditioning load of II tire AC Coach (c)
a. 5.3 tons b. 7.4 tons c. 11.1 tons d. None

62. Approximate Air Conditioning load of III tire AC Coach (c)
a. 5.3 TR b. 7.4 TR c. 11.1 TR d. None

63. Approximate Air Conditioning load of AC chair car (c)
a. 5.3 TR b. 7.4 TR c. 11.1 TR d. None

64. Cooled air is sent to the compartment through **(b)**
a. Fresh air filters b. Duct & grills c. Return air filters d. None

65. Required fresh air for AC RMPU coach is collected from roof Is sent to evaporator through (a)
a. Fresh air filters b. Return air filters c, Both (a) and (b) d, None

66. Air cooled from compartment of AC coach is sent to evaporator through (a)
a. Return air filters b. Fresh air filters c. Both (a) and (b) d. None

67. Air blown over condenser is sent to (c)
a. Evaporator b. Heater c. Out side atmosphere d.None

68. Air flow of condenser motor used in Sidwal make RMPU (c)
a. 10000 cubic feet for minute b. 17000 cubic Meter for hour
c. Both (a) and (b) d. None

69. Air flow of condenser motor used in FEDER make RMPU (c)
a. 8000 cubic feet for minute b. 13600 cubic meter for hour
c. Both (a) and (b) d. None

70. Type of condenser/evaporator coils used in Sidwal / Fedders make RMPU (a)
a. Fin-On-Tube type b. Shell on tube
c. Tube in tube d. All the above

71. The condenser coils are made up of (b)
a. Aluminum b. Copper c. Zinc d. None

72. The evaporator coils are made up of (b)
a. Aluminum b. Copper c. Zinc d. None

73. The outer diameter of condenser coil of Sidwal make (a)
a. 9.52 mm b. 6 mm c. 28 mm d. None

74. The outer diameter of evaporator / condenser coil of Sidwal / Fedders make (a)
a. 9.52 mm b. 6 mm c. 28 mm d. None

75. Air flow of evaporator fan used in Sidwal make RMPU (c)
a. 2400 cubic feet per minute b. 4000 ± 5 % cubic meters of hour
c. Both (a) and (b) d. None

76. Air flow of evaporator fan used in Fedders make RMPU (b)
a. 2000 ± 10 % cubic meters of hour b. 4200 ± 10 % cubic meters of hour
c. Both (a) and (b) d. None

77. The under frame equipment of the RMPU coach other than first class has (e)
a. One set of battery 110V, 1100 AH. b. Two sets of alternators 25KW capacity
c. 200 A battery charger d. Two WRAs
e. All the above

78. Dip tray provided under cooling coils to collect the rain water should be made of (b)
a. Iron b. Steel c. Copper d. Zinc

79. Drip tray provided under cooling coils in RMPU coaches should have a depth of (a)
a. 90 mm b. 50 mm c. 25 mm d. None

80. Recommended relative humidity inside the coach is (a)
a. 60 % maximum b. 70 % maximum c. 80 % maximum d, None

81. Power cables and control cables of RMPU should run through (b)
a. Same conduit b. Separate conduit
c. Same conduit with better insulation d. None

82. Motors used in RMPU coaches are (a)
a. Induction motors b. Synchronous motors
c. Slip ring induction motors d. None

83. The induction motors used in RMPU are (a)

a. Three phase motors b. Single phase motors
c. Two phase motors d. None

84. The starters used for 3 phase induction motors of RMPU coaches are (a)
a. Direct on line starters b. Star delta starters
c. Slip ring induction starters d. None

85. RMPU of AC coach should be made from **(c)**
a. Iron with GI coating b. Iron with nickel coating
c. Stainless steel d. None

86. Fresh air requirement in side the 1st class compartment for person is (a)
a. 0.7m³ /min b. 0.35 m³ /min c. 0.5 m³ /min d. None

87. Fresh air required in side the AC coach for II Tire Sleeper and III Tire Sleeper per person is about (b)
a. 0.7m³ /min b. 0.35 m³ /min c. 0.5 m³ /min d. None
88. Minimum fresh air requirement for one RMPU of AC coach (a)
a. >17.5 m³ /min b. ,5.5 m³ /min c. 10 m³ /min d. None

89. The compressor of RMPU coach shall be provided with (c)
a. High pressure cut out b. Low pressure cut out
c. Both (a) and (b) d. None

90. HP cut out of RMPU coach shall be set at (a)

a. 135 ± 15% PSI b. 415 ± 15% PSI
c. 35 ± 15% PSI d. None

91. LP cut oout of RMPU coach shall be set at (c)
a. 135 ± 5% PSI b. 415 ± 15% PSI
c. 35 ± 15% PSI d. None

92. HP cut out of RMPU coach is (a)
a. Manual reset type b. Auto reset type
c. Both (a) and (b) d. None

93. Accessibility of return air filters of RMPU of AC coach (b)
a. From top of the unit
b. From bottom of the unit in side the coach in corridor
c. Middle access door at the bottom of the unit
d. Access door on each side at bottom of the unit

94. Fresh air filters are used for filtering (b)
a. Return air b. Only fresh air
c. Return air and fresh air d. None

95. RMPU blower fan motors are manufactured by (d)
a. ABB b. CG c. NGEF, KEC, Bharat Bigili d. All of the above

96. Fresh air filter maximum air flow rate shall be (a)
a. 10 m³/min b. 15 m³/min c. 20 m³/min d. None

97. Fresh air filter maximum air velocity in feet/min (a)

a. 300 b. 400 c. 500 d. None

98. The maximum resistance of the fresh air filter, when it is clean (a)
a. 4mm (WG) b. 6mm (WG) c. 8 mm (WG) d. None

99. The maximum resistance of fresh air filter with dust concentration is (a)
a. 12 mm (WG) b. 6 mm (WG) c. 8 mm (WG) d. None

100. Return air filter maximum air flow rate in m-cub/minute (a)
a. 30 b. 40 c. 50 d. None

101. Return air filter maximum air velocity in feet/minute (a)
a. 500 b. 700 c. 1000 d. None

102. Maximum resistance of the return air filter when it is clean (a)
a. 3 mm (WG) b. 5 mm (WG) c. 7 mm (WG) d. None

103. Maximum resistance of the return with dust concentration (a)
a. 10 mm (WG) b. 15 mm (WG) c. 18 mm (WG) d. None

104. The evaporator blower should be designed for air delivery at ____mm head of water gauge (c)
a. 5 b. 10 c. 20 d. None

105. The copper parts of the Air conditioning coil should be (a)
a. Tinned b. GI coated c. Nickel coated d, None

106. The cooling temperature settings of electronic thermostat are recommended by RDSO is (a)
a. 23ºC to 25ºC b. 22ºC to 25ºC c. 24ºC to 26ºC d. None

107. The heating temperature setting of electronic thermostat are recommended by RDSO is (b)
a. 17ºC to 19ºC b. 19ºC to 21ºC c. 21ºC to 23ºC d. None

108. During IR test of RMPU, IR of compressor / Motors shall not be less than (b)
a. 100 mega ohms b. 2 mega ohms c. 20 mega ohms d. None

109. IR value of RMPU to be tested with (a)
a. 1000 Volts megger b. 500 volts megger
c. 100 volt megger d. None

110. During high voltage test of RMPU, the duration of high voltage to be applied on RMPU is (a)
a. 60 sec b. 120 sec c. 30 sec d. None

111. During high voltage test of RMPU, the high voltage to be applied (b)
a. 1000 volts ac b. 2000 volts ac c. 5000 volts ac d. None

112. Number of over heat protector thermostats are required for one RMPU are (b)
a. 1 b. 2 c. 3 d. None

113. Number of vane relays required for one RMPU are (a)
a. 2 b. 1 c. 3 d. None

114. Number of LP cut outs required for one RMPU are (a)
a. 2 b. 1 c. 4 d. None

115. Number of HP cut outs required for 1 RMPU are (a)

a. 2 b.1 c. 4 d. None

116. Three phase 3 KW heaters required for one RMPU unit is (b)
a. 1 b. 2 c. 3 d. 4

117.The electronic thermostat will be located on (a)
a. One of the flap door of control panel from in side b. Front top of the unit
c. From bottom of the unity in side the coach d. None

118. Sensor of electronic thermostat will be located (a)
a. at return air entries b. fresh air path
c. In the duct in side the compartment d. None

119. The size of cables recommended for 5-10 HP motor leads in RMPU coaches (a)
a. 6 sq. Mm (84/0.3) b. 4 sq. mm (56/0.3)
c. 1.5 sq. mm d. None

120. The size of the cable recommended for 0.75 HP to 2 HP motor leads in RMPU coaches (b)
a. 6 sq. Mm (84/0.3) b. 4 sq. mm (56/0.3)
c. 1.5 sq. mm d. None

121. The size of cable recommend for control panel wiring of RMPU coaches (c)
a. 6 sq. mm b. 4 sq. mm c. 1.5 sq. mm d. None

122. Rotor shafts of RMPU motors are made out (c)
a. EN.8 b. EN.9 c. Both a and c d, None

123. The Study state temperature rise of stator winding of compressor motor of H class RMPU should not exceed above ambent of 65ºC with full load at rated voltage is (b)
a, 70ºC b. 80ºC c. 100ºC d. None

124. The Study state temperature rise of stator winding of condensor/ blower motor of F class RMPU should not exceed above ambent of 65ºC with full load at rated voltage is (a)
a, 70ºC b. 80ºC c. 100ºC d. None

125. The type of insulation recommended for condenser and evaporator motor in RMPU coaches are(a)
a. F class b. A class c. B.class d. None

126. The type of insulation recommended for compressor motor in RMPU coaches (b)
a. F class b.H class c. B.class d. None

127. Capacity of WRA mono block pump in RMPU coaches (a)
a. 0.5 HP/0.37 KW at 415 V 50 Hz PF 0.5
b. 1.0HP/0.746 KW at 415 V 50HZ PF 0.5
c. 1.5 HP/ 1.1 KW at 415 V 50 HZ PF 0.5 d. None

128. Control panel of RMPU coach works (a)
a. 110 V AC 50Hz b. 230V AC 50Hz
c. 415 V AC 30Hz d. None

129. The maximum ripple content of 415/110 V supply fed to control circuit can (a)
a. 10% b. 15% c. 20% d. 25%

130. No of over load relay provided in the control panel of one RMPU (b)
a. 3 b. 5 c. 7 d. None

131.No of time delay relays provided in one RMPU are (b)
a. 3 b. 2 c. 4 d. 1

132. No of control transformers provided in RMPU AC coach (a)
a. 1 b. 2 c. 3 d. None

133. The capacity of control transformer provided in RMPU coach (a)
a. 400 VA b. 1000 VA c. 2500 VA d. None

134.The capacity of C1, C2, C3 contactor provided in control panel of RMPU coach is (a)
a. 16 A b. 50 A c. 32 A d. None

135.The purpose of time delay relay I is (a)
a. To delay compressor I operation for 2 minutes
b. To delay the compressor II operation for 2.5 minutes
c. To delay the condenser I operation for 2minutes
d. To delay the condenser II operation for 2.5 minutes

136. The purpose of time delay relay II (b)
a. To delay compressor I operation for 2 minutes
b. To delay the compressor II operation for 2.5 minutes
c. To delay the condenser I operation for 2minutes
d. To delay the condenser II operation for 2.5 minutes

137. The duration of TDR- I delay setting (a)
a. 2 min b. 2.5 min c. 3.5 min d. none

138. The duration of TDR- II delay setting (b)
a. 2 min b. 2.5 min c. 3.5 min d. none

139. The current carrying capacity of rotary switch RSWI provide in control panel of RMPU coach is (a)
a. 63 A b. 16 A c. 6/8 A d. None

140. Make of rotary switches recommended by RDSO to provide in control panel of RMPU AC Coach is (c)
a. Salzer b. Keycee c. Both a & b d. None

141. Makes of contractors recommended by RDSO to provide in control panel of RMPU AC Coach is (c)
a. L&T b. BCH c. Both a & b d. None

142. RMPU over load relay one (OLI) NC contract is connected in series to the (a)
a. Blower contractor coil b. Auxiliary contractor coil
b. Condenser I&II contractor Coil c. Compressor I&II contractor coils
e. Heaters I&II contractor coils f. All of the above

143. RMPU Air loses indication LED glows when vane relay contract are in (a)
a. Open condition b. Closed condition
c. Both a & b d. None

144. If blower fan motor is defect in RMPU coach. The result will (d)
a. Condenser motors did not switch ON b. Compressor did not switch ON
c. Heater did not switch ON d. All of the above

145. If vane relays are defective in RMPU coach the results will (d)
a. Condenser motors did not switch ON b. Compressor did not switch ON
c. Heaters did not switch ON d. All of the above

146. If single phasing occurred on any one of the motor, in RMPU Coach, result will (c)
a. Motor trips b. Motor failure indication occurs
c. Both a & b d. None

147. AC system is operating in manual mode, both condenser motors defective in RMPU coach, the result will be (d)
a. High pressure develops b. HP1 and HP2 open
c. compressors tips d. All of the above

148. System working in manual cooling mode, blower or vane relays became defective in RMPU coach, the results will be (d)
a. Low pressures develops b. LP1, LP2 open
c. Both compressor will trip in 15 minutes d. all of the above

149. The system is working in manual heating mode, blower/vane relay defective in RMPU the result will be (d)
a. temperature shoots up b. OHP1, OHP2 open
c. Heater switches off d. All of the above

150. If heaters are ON condition, in RMPU then compressor and condensers will be (b)
a. ON condition b. OFF Condition
c Switches off after 15 minutes d. None

151 If time delay relay-I fails to operate in RMPU the result will be (b)
a. Compressor-I switches on b. Compressor-I does not switches on
c. Compressor switches on but after two minutes it switches off
d. None.

152 If time delay relay two fails to operate in RMPU the result will be (b)
a. Compressor-II switches on b. Compressor-II does not switches on
c. Compressor-II switches on but switches off 2.5 minutes.
d. None.

153 AC system is working on vent mode in RMPU then (a)
a. Blower only works b. Heater only works
c. Entire cooling systems works d. None

154 AC system is working in auto mode in RMPU then (c)
a. It works on cooling mode only b. It works on heating mode only
c. It works on both (a) & (b) d. None

155 If system works on manual cooling mode in RMPU then (d)
a. Blower works b. Two condensers works
c. compressor works d. All of the above

156. If system work on manual heating mode in RMPU then (c)
a. Blower works b. Heater works
c. Both (a) & (b) d. None

157. Vapour compressor system used in Railways consists of (g)
a. Compressor b. Condenser
b. Expansion value d. Evaporator
e. Dehydrator and filter f. Accumulator or liquid receiver
g. All of the above.

158. The purpose of low pressure cut out used in vapour compression system is (d)
a. It shuts down the compressor if the suction pressure drops down
b. It automatically resets if the pressure becomes normal
c. Both (a) & (b)
d. None.

159. Number of WRAs are available in RMOU AC Coach are (b)
a. 1 b. 2 c. 3 d. None

160. The capacity of over head tank (Auxilary tank) provided in RMPU coaches is about (a)
a. 50 ltr b. 400 ltr c. 300 ltr d. None.

161.Over load setting of compressor motor is in RMPU coaches is (c)
a. 2.2 A b. 3.2 A c. 10.5 A d. None

162. Capacity of battery used in RMPU AC Coach (b)
a. 800 AH b. 1100 AH c. 540 Ah d. None

163. Capacity of battery charger used in RMPU AC Coach (a)
a. 220 A b. 40 A c. 70 A d. None

164. Battery charger used in RMPU AC Coach is also called as (a)
a. Pre-cooling transformer b. Diesel DC generator set
c. Both (a) & (b) d. None

165. Number of VRLA cells available in battery of SG RMPU AC Coach (a)
a. 56 b. 54 c. 112 d. None

166. The capacity of HRC fuses to be provided for 1100AH battery of SG RMPU AC Coach is (a)
a. 400 A b. 250A c. 100A d. None

167.The location of battery HRC fuse to be provided for 1100 AH battery of SG RMPU AC coach is (c)
a. At positive of the battery b. At negative of the battery
c. Both (a) & (b) d. None

168.The purpose of power selector rotary switch RSW1 provided in power panel of RMPU AC Coach is (e)
a. To select alternator one and battery b. To select alternator two and battery
c. To select alternator one & two and battery d. All the above

169.The capacity of plant selector rotary switch RSW2 provided in power panel of RMPU AC coach is (a)
a. 300 A b. 400A c. 63A d. None

170. The capacity of positive HRC fuse to be provided for inverter (before RSW2) in plant selector circuit in power panel of RMPU AC Coach is (a)
a. 250A b. 400A c. 63A d. None

171. The capacity of HRC fuses to be provided for 415V 3phase supply of pre-cooling battery charger of RMPU AC coach is. (a)
a. 63A b. 160A c. 400A d. None

172.The capacity of power selector rotary switch RSW1 provided in power panel of RMPU AC coach is (a)
a. 500A b. 160A c. 16A d. None

173.HFC refrigerant recommended for RMPU coaches in place of R22 is (b)
a. R 134a b. R 407C c. R 290 d. None

174.Input supply for the Electronic thermostats controlling unit is (c)
a. 110V DC b. 110AC c. either of one d. None.

175.Inverters convert (b)
a. AC into DC b.DC into AC c. Both (a) & (b) d. None

176. Input voltage range to the under slung/on board inverter roof mounted AC coach 25 KVA inverter is . (a)
a. 90 to 140V DC with ± 15% ripple (103.5V to 154V)
b. 70 to 170V DC with ± 15% ripple
c. 80 to 200V DC with ± 15% ripple d. None

177. Out put voltage of under slung/0n board roof mounted AC Coach 25KW inverter is (a)
a. 415V ± 5% 3phase 50Hz b. 230V ± 5% 1phase 50Hz
c. 110V ± 5% 3phase 50Hz d. none

8.LHB COACHES

1. What is the rating of distribution transformer used in LHB AC Coaches (c)
   a. 50KVA b. 26KVA c. 60KVA d. 30KVA

2. What is the integrated panel control supply in LHB AC Coach (b)
   a. 110V AC b. 110V DC c. 415V 3Ø AC d. 750V 3Ø AC

3. What is the rating of Battery used in LHB AC Coach (b)
   a. 800Ah b, 70Ah c. 1100Ah d. 90Ah

4. What is the rating Battery fuse used in LHB AC Coach (b)
   a. 100A b. 32A c. 40A d. 63A

5. What is the rating of LHB AC Coach 750V side fuse (b)
   a. 100A b. 125A c. 63A d. 250A

6. What is abbreviation of RBCR (b)
   a. Regulated Booster current b. Regulated Battery charger
   c. Regulated Battery Current d. None.

7. The Main function of RBCR used in LHB Coach (d)
   a. To Charge the battery b. To feed control supply
   c. To feed supply light and fans d. All the above.

8. What is input supply to RBCR in LHB coach (d)
   a. 110V AC b. 110V DC C. 230V AC d. 415V 3Ø AC

9. What is the capacity of RBCR (c)
   a. 2.5 KW b. 5KW c. 6.5KW d. 10KW

10.What is the RDSO specification number of RBCR used in LHB coach (a)
   a. RDSO/PE/SPEC/AC/0129-2009 (Rev-I)
   b. RDSO/PE/SPEC/AC/0056-2014 (Rev-I)
   c. EDTS-041-Rev A
   d. None

11. What **is** the maximum out put current DC Current of RBCR in LHB coach (a)
   a. 50A b. 220A c. 20A d. None

12. Output Voltage Range of RBCR in LHB Coach (a)
   a. 110V – 135V DC b. 110V-135V AC c. 415V AC d. None

13.What is abrivation of EBCR used in LHB AC Coach (a)
   a. Emergency Battery charger b. Emergency Boost charger
   c. Emergency Back up charger d. None

14. What is the rating of EBCR in LHB AC Coach (b)
   a. 0.5KW b. 2.5KW c.6.5KW d. None

15. What is the input supply of EBCR in LHB coach (c)
   a. 110V AC b.110V DC c.230V AC d.415V, 3Ø AC

16. What is the out put supply voltage of EBCR in LHB coach (b)
   a. 110V AC b.110V DC c.230V AC d.415V, 3Ø AC

17. What is the maximum current out put of EBCR in LHB coach (b)
a. 220A b. 20A c. 63A d. 35A

18. what is the RDSO specification number of EBCR in LHB AC coach (c)
a. RDSO/PE/SPEC/AC/0129-2009(Rev-1) b. RDSO/PE/SPEC/AC/0056-2014(Rev-1)
c. EDTS-163, Rev-C d. EDTS-041, Rev-A

19. What id the purpose of EBCR in LHB AC coach (b)
a. Give supply to the AC plant b. To give control supply to power panel in emergency
c. To give supply to mobile chargers d. None

20.When the EBCR in LHB AC coach is starts functioning (b)
a. It starts when coach is dark b. It starts when RBCR is fails to work
c. It starts on Pre-cooling supply d. None

21. What is the supply of end on generation system in LHB (a)
a. 150V, 50Hz, 3Ø, AC b. 230V, AC c. 415V, 3Ø, 50Hz d. None

22. How many distribution transformer per coach in LHB AC coach (a)
a. One b. Two c. Three d. None

23. How many vane relays are available in LHB AC coach (d)
a. One b. Two c. Four d. None

24. EOG power car supply Is feeded to coaches **in** LHB coaches (b)
a. IV coupler b. ZS coupler c. CBC coupler d. None

25. EOG power car supply Is feeded to AC coaches in Garibrath AC coaches by (a)
a. IV coupler b. ZS coupler c. CBC coupler d. None

26. How many ZS couplers having per coach (a)
a. Two male and Two female b. Four male and four female
c. Three male and Three female d. None

27. What is capacity of the fuse provided in 415 voltage side of LHB AC (a)
a. 100A b. 125A c. 80A d. 63A

28. What is capacity of the fuse provided in local main supply of LHB AC (c)
a. 100A b. 125A c. 80A d. 63A

29. How many fuses of 32A are provided in positive fuse box of LHB AC coach (a)
a. One b. Two c. Three d. Nil

30. How many fuses of 32A are provided in negative fuse box of LHB AC coach (b)
a. One b. Two c. Three d. Nil

31. What is input supply of microprocessor in LHB AC coach (b)
a. 110V Ac b. 110V DC c. 230V AC d. 415V AC

32. Contactor K1 and K2, are for what purpose in LHB AC coach (a)
a. for feeeder selection b. for local supply c. Transformer d. None

33. Contactor K41 and K42 are for what purpose in LHB AC coach (b)
a. for feeeder selection b. for local **main**supply c. Transformer d. All the above

34. Contactor K43 is for what purpose in LHB AC coach (c)
a. for DC supply b. Feed supply selection
c. for local main supply d. Transformer supply

35. What is the abbreviation form of D and ED in LHB AC coach (a)
a. Disconnection and Earthing device b. Disconnecting and Energing device
c. Dead and Energing device d. None

36. What is the purpose of Disconnecting and Earth in Device in LHB coach (a)
a. Disconnecting the circuit and Earthing in Off position b. Connecting and Earthing
c. Disconnecting and Earthing in On position d. None

37. What is the abbreviation of MMR used in LHB coach (c)
a. Measuring and Minimising Relay b. Measuring and Maximising
c. Measuring and Monitoring Relay d. All the above

38. How many MMR are available in 750V side in LHB AC coach (c)
a. 1 b. 3 c. 2 d. 4

39. How many MMR are available in 415V side in LHB AC coach (a)
a. 1 b. 3 c. 2 d. 4

40. What purpose K05 contactor using in LHB coach (c)
a. for lighting circuit b. for RMPU c. for WSP d. for WRA

41. How many centrifugal double inlet exhaust fans are available in LHB AC coach (b)
a. 1 b. 2 c. 3 d. 4

42. How many fans are available in LHB AC coaches manufactured after 2015 in passenger area**(d)**
a. 18 b. 20 c. 16 d. None

43. What is the contactor number of WRA in LHB AC coach (c)
a. K1, K2 b. K28, K29 c. K24, K25 d. K30, K31

44. What is the indicating MPCB number of WRA (b)
a. F85, F86 b. F21, F22 c. F30, F31 d. None

45.What id the abbreviation of MPCB (b)
a. Motor pump case breaker b. Motor protection circuit breaker
c. Monitoring protecting circuit breaker d. None

46. What is the rating range of MPCB of WRA pump in LHB (a)
a. 1.0A to 1.6A b. 1.5A to 2.5A c. 2.5 to 3.0A d. 3.0A to 3.5A

47. What is the Rating range of MPCB for exhaust fan in LHB AC coach (b)
a. 1.0A to 1.6A b. 0.1A to 2.5A c. 2.5A to 3.0A d. None

48. What is the contactor number of fresh air flap motor in LHB AC coach (c)
a. K8 b. K9 c. K21 d. K44

49. What is the input supply for flap motors in LHB AC coach (c)
a. 110V AC b. 110V DC c. 24V DC d. 230V AC

50.What is the blower contactor number is in LHB AC coach PP side (a)
a. K28 b. K26 c. K31 d. K32

51. What is the blower contactor number of NPP side RMPU in LHB AC coach (b)
a. K28 b. K26 c. K31 d. K32

52. What is condenser motors contactor number PP side of LHB AC coach (a)
a. K36, K37 b. K38, K39 c. K28, K26 d. None

53. What is condenser motors contactor number NPP side RMPU in LHB AC coach (b)
a. K36, K37 b. K31, K32 c. K28, K26 d. None

54. What is compressor contactors of PP side of LHB AC coach (d)
a. K36, K37 b. K31, K32 c. K28, K26 d. K38, K39

55. What is compressor motors contactor number NPP side RMPU in LHB AC coach (d)
a. K36, K37 b. K31, K32 c. K38, K39 d. K33, K34

56. What is Heater contactor number of PP side RMPU in LHB Ac coach (c)
a. K33 b. K35 c. K40 d. K39

57. What is Heater contactor number of NPP side RMPU in LHB Ac coach (b)
a. K33 b. K35 c. K40 d. K39

58. What is the input supply voltage for pump controller in AC coach (d)
a. 110V AC b. 110V DC c. 24V DC d. All the above

59. How many Insulation control relays available in LHB AC Coach (b)
a. One b. Two c. Three d. Four

60. What is the function of Insulation control relays in LHB AC coach (b)
a. Gives indication of higher insulation in panel
b. Gives indication of lower insulation in panel
c. Not indicate any thing
d. Indicate supply position

61. K05 timer belongs for which device in LHB coach (c)
a. Timer for AC compressor b. Timer for AC plant
c. Timer for Anti skid device d. None of the above

62. Contactor K06 belongs to which circuit in LHB AC coach (b)
a. Anti skid device b. Electro pneumatic break application
c. AC plant d. None of the above

63. Contactor K07 belongs to which circuit in LHB AC coach (c)
a. Anti skid device b. Electro pneumatic break application
b. Electro pneumatic break release d. None

64. Contactor K08 belongs to which circuit in LHB AC coach (a)
a. MVR of level 1 b. MVR of level 2 c. MVR of level 3 d. None

65. What ids the abbreviation of MVR in LHB Ac coach (a)
a. Minimal voltage relay b. maximum voltage relay
c. Maximum value relay d. None

66. Contactor K-23 indicates which supply availability in LHB AC coach (c)
a. 110V DC b. 110V AC c. 415V AC d. None

67. F-01 MCB (triple pole) 10A belongs to which motor in LHB AC coach (a)
a. Blower motor of unit 1 b. Condenser motor of unit 1
c. Condenser motor of unit 2 d. Blower motor of unit 2

68. F-02 MCB (Triple pole) 10A belong to which motor in LHB AC coach (b)
a. Blower motor of unit 1 b. Blower motor of unit 2
c. Condenser motor of unit 1 d. Condenser motor of unit 2

69. F-03 MCB (Triple pole) 20A belong to which motor in LHB AC coach (c)
a. Blower motor of unit 1 b. Blower motor of unit 2
c. **Compressor**motor of unit 1 d. Condenser motor of unit 2

70. F-05 MCB (Triple pole) 20A belong to which motor in LHB AC coach (b)
a. Compressor motor of unit 1 b. Compressor motor of unit **1.2**
c. Blower motor of unit 1 d. Blower motor of unit 2

71. F-04 MCB (Double pole) 10A belong to which motor in LHB AC coach (c)
a. Compressor motor of unit 1.1 b. Compressor motor of unit 1.2
c. Crank case heaters for CP 1.1 and CP 1.2 d. None

72. F-06 MCB (Triple pole) 10A belong to which motor in LHB AC coach (a)
a. Condenser motor of unit 1.1 b. Condenser motor of unit 1.2
c. Condenser motor of unit 2.1 d. Condenser motor of unit 2.1

73. F-07 MCB (Triple pole) 10A belong to which motor in LHB AC coach (b)
a. Condenser motor of unit 1.1 b. Condenser motor of unit 1.2
c. Condenser motor of unit 2.1 d. Condenser motor of unit 2.1

74. F-08 MCB (Triple pole) 6A belong to which motor in LHB AC coach (a)
a. Heater of unit-1 b. Heater of unit-2
c. Blower motor unit-1 d. None

75. F-09 MCB (Triple pole) 20A belong to which motor in LHB AC coach (d)
a. Blower motor-1 b. Blower motor-2
c. Compressor motor 2.2 d. Compressor motor 2.1

76. F-10 MCB (Double pole) 10A belong to which circuit in LHB AC coach (d)
a. Heater of unit-1 b. Heater of unit-2
c. Crank case heaters for CP 1.1 and CP 1.2 d. Crank case heaters for CP 2.1 and CP 2.2

77. F-11 MCB (Triple pole) 20A belong to which motor in LHB AC coach (a)
a Compressor motor of unit 2.1 d. Compressor motor of unit 2.2
c. Compressor motor of unit 1.1 d. Compressor motor of unit 1.2

78. Net 1 and Net 2 of LHB AC can be selected at a time (a)
a. No b. Yes c. Both working at time d. None

79. Why the Net 1 and Net 2 can not be selected at a time in LHB coach (c)
a. Since there is a different supply b. Since there is no supply
c. Since there is a different supply d. All of the above

80. Contactor K- 44 for which supply feed to coach in LHB type AC coach (c)
a. 110V AC supply b. 110V AC supply
c. 60 KVA transformer out put supply d. None of the above

81. In LHB type RMPU, what type of over heat protection available (c)
a. OHP b. ESTI c, Both (a) and (b) d. None of the above

82. When ESTI fuse link protection comes in circuit in LHB RMPU (c)
a. If OHP fail to operate b. If heating temperature**increases**
c. Both (a) and (b) d. None

83. ESTI self destroying type fusible link of heater circuit in LHB RMPU in series with which supply (d)
a. 110V AC b. 230V AC c. 110V DC d. 415V AC, 3Ø

84. How many sensors are available in LHB AC coach for sensing the temperature parameters (d)
a. 3 b. 4 c. 5 d. 6

85. Humidity control is facility is available in which type coach (c)
a. Under slung type AC b. SG type RMPU
c. LHB type RMPU d. None of the above

86. Why LHB RMPU motor are in built with OTP **(a)**
a. To sense and protect against over temperature
b. To sense and protect against lower temperature
c. To sense and protect against lower temperature
d. To sense and protect against low IR value

87. What are the under gear safety items to be checked in LHB AC coach (e)
a. Junction boxes b. 60 KVA transformer c. WRA pumps d. Battery box e. all of the above

88. What is abbreviation of**LHB** (c)
a. Like Half man bush b. Link Half man Bosh
c**. Linke Hoffmann Busch** d. None

89. LHB Technology was imported from which (d)
a. Japan b. USA c. Italy d. Germany

90.Ist Alstam LHB coach designed and manufactured and commissioned on (a)
a. 23 june 2003 b. 23 june2004 c. 23 june 2005 d. None

91.Length of LHB Coach is (b)
a. 22.54M b. 23.54M c. 24.54M d, 25,54M

92.Passenger capacity of 2-AC LHB coach (d)
a. 46 b. 48 c. 52 d. 54

93.Passenger capacity of 3-AC LHB coach (d)
a. 46 b. 56 c.64 d. 72

94.Which AC coaches are designed with Moisture control (c)
a. Under slung type b. RMPU type c. LHB type d. All the above

95.750V Circuit insulation test to be done by with……Volts megger (c)
a. 230V b. 500V c. 1000V d. None

96.415V circuit cables insulation test to be done by with……..Volts megger (c)
a. 230V b. 500V c. 1000V d. None

97.230//190Vcircuit cables insulation test to be done by with……..Volts megger (b)
a. 230V b. 500V c. 1000V d. None

98.110V circuit cables insulation test to be done by with……..Volts megger (b)
a. 230V b. 500V c. 1000V d. None

99.24V circuit cables insulation test to be done by with……..Volts megger (a)
a. **110V** b. 500V c. 1000V d. None

100. 750V circuit cables insulation test done with 1000V megger the value should not be less than (c)
a. Not less than **2 M**ohms b.Not less then 3 M ohms
c. Not less then 5M Ohms d. Not less then 10 M ohms

101. 415 Volts circuit cable insulation test done by 1000V megger the value should not less than…..(b)
a. 2 M Ohms b. 3 M ohms c. 5 M ohms d. 10 M ohms

102. 230/190V circuit cable insulation test done by with 500 megger the value should not less than… (a)
a. 2M ohms b. 3M ohms C. 5M ohms d. 10M ohms

103. 110V circuit cable insulation test done by with 500 megger the value should not less then…ohms (a)
a. 2M ohms b. 3M ohms C. 5M ohms d. 10M ohms

104. LHB type one RMPU cooling capacity (c)
a. 5Ton b. 6ton c. 7ton d. None

105. LHB type one RMPU power consumption capacity……..KW (d)
a. 10.6KW b. 12.6KW c. 13.0KW d. 13.6KW

106. LHB type one compressor motor power consumption capacity……..KW (a)
a. 5.25KW b.6.25KW c. 7.25KW d. None

107.LHB type RMPU Manufacturing firms are (d)
a. M/S Sidwal b. M/S LLOYD c. M/S Stesalit d. All the above

108.Refrigerents used in LHB RMPU are (d)
a. R134a b. R22 c. 407C d. (b) & (c)

9.ABBREVIATIONS OR EXPANDED FORM

1. What is the abbreviation of BARC (a)
   a. Bhabha Atomic Research center b. Bombay Atomic Research Center
   C. Bhagya nagar Atomic Research Center d. None

2. What is the abbreviation form of COFMOW (b)
   a. Central for Modernization office works b. Central for Modernization of workshop
   C. Central for Modernization of other works d. None

3. What is the abbreviation form of CONCOR (a)
   a. Container corporation b. Central corporation
   C. Cement corporation d. None

4. What is the abbreviation form of CORE (c)
   a. Central organization for rural Engineering
   b. Central Organization for roads Engineering
   C. Central Organization for railway Electrification
   d. None

5. What is the abbreviation form of CRIS (b)
   a. Central for Rural information system b. Central For railway information system
   C. Central for railway investment system d. None of the above

6. What is the abbreviation form of CAMTECH (d)
   a. Central Advanced Management Technology
   b. Central Advance Management of Tracks
   c. Central Advanced Monitoring Technology
   d. Centre For Advance Maintenance Technology

7. What is the abbreviation form of IRCON (a)
   a. Indian Railway Construction company Limited
   b. Indian Roads Construction company Limited
   C. International Railway Construction company Limited
   d. None

8. What is the abbreviation form of IRFC (b)
   a. International Rural Finance Corporation
   b. Indian Railway Finance Corporation
   C. Indian Roads Finance Corporation
   d. None

9. What is the abbreviation form of IRIEEN (a)
   a. Indian Railway Institute of Electrical Engineering
   b. Indian Railway Institute of Electronics Engineering
   C. Indian Railway Institute of Economics and Engineering
   d. None

10. What is the abbreviation form of IRWO (d)
   a. Indian Rural Welfare Organization b. International Rural Welfare Organization
   C. Indian Rural work Organization d. Indian Railway welfare organization

11. What is the abbreviation form of PNM (c)
   a. Passenger Nominating Machinery b. Permanent National Machinery
   C. Permanent Negotiating Machinery d. Permanent Navigating Machinery

12. What is the abbreviation form of RCT (a)
   a. Railway Claims Tribunal b. Railway Charges Tribunal
   C. Railway change Tribunal d. Railway Cleaning Tribunal

13. What is the abbreviation form of RDSO (b)
a. Railway Design and Standards Origination b. Research Design and Standards Organization
C. Railway Design and Standards Organization d. None of the Above

14. What is the abbreviation form of RITES (d)
a. Railway Institute of Technical Engineering services ltd.
b. Railway Institute of Technical Electrical services ltd.
C. Railway Indian Technical Electrical services ltd.
d. Rail India Technical and Economics services Ltd

15. What is the abbreviation form of SCADA (a)
a. Supervisory Control and Data Acquisition.
b. Supervisory Central and Distribution Acquisition
C. Supervisory Central Advanced Data Acquisition.
d. none of the Above

16. What is the abbreviation form of FRCPY (c)
a. Fault rate Percentage per year b. Failure rate Practice per year
C. Failure rate Percentage per year. d Fault rate Practice per year

17. What is the abbreviation form of PATB (b)
a. Passenger and Terminal bracket b. Passenger alarm Terminal Board
C. Passenger aluminum terminal Board d. Permanent alarm terminal Board

18. What is abbreviation form of EIG (c)
a. Electrical Institute of Government b. Electrical Inspection to the Government
c. Electrical Inspection to the Government d. None of the above.

19. Who is EIG (b)
a. PCEN b. PCEE C. PCME d. PCPO

20. What is abbreviation form of DGS&D (a)
a. Director General of supply and disposal b. Director General of stores and Distribution
c. Director General of Stores and Disposal
d. None of the above.

21. What is abbreviation form of EMD (c)
a. Earnest Money Demand b. Earnest Monitoring and Dispatch
c. Earnest Money Deposit d. None of the above

22. What is abbreviationof form of SD (d)
a. Supply and Dispatch b. Supply and Demand
c. Security Data d. Security Deposit

23. What is abbreviationof PG (a)
a. Performance Guarantee b. Programmer Guarantee
c. Play and Ground d. Program of Goods

24. What is abbreviationof CRI (c)
a. Colour remaining Index b. Coach rendering Index
c. Colour rendering Index d. Colour resonance Index

25. What is abbreviationof SAF (d)
a.Supply Application Form b. Stores Application Form
c. Supply Advanced Form d. Stocking Application Form

10.EOG POWER CAR

1. What is the meaning of EOG? (b)
   a. End off generation b. End on generation
   c. End over generation d. All the above.
2. What is the supply voltage of EOG system? (d)
   a. 415 V AC b. 440 V AC
   c. 750 V DC d. 750 V AC
3. What is the capacity of alternator of EOG power car? (c)
   a. 280 KVA b. 490 KVA
   c. 500 KVA d. 450 KVA
4. What is the unit for capacity of a diesel engine? (c)
   a. HP b. HHP
   c. BHP d. KVA
5. What is the operating speed of diesel engine of EOG power car? (b)
   a. 1800 rpm b.1500 rpm
   c. 2000 rpm d 1000 rpm
6. What is the battery voltage and capacity of engine staring batteries in EOG power car? (b)
   a. 8V 290 AH b 24V 290 AH
   c. 24V 450 AH d 8V 450 AH
7. No. of engines available in a EOG power car is _____? (b)
   a. 1 b 2
   c. 4 d.3
8. What is the quantity and capacity of transformers in LHB type EOG power car? (c)
   a. 2 nos. of 50 KVA and 1 no. of 60 KVA b. 4 Nos. of 50 KVA
   c. 3 Nos. of 60 KVA d. 20 Nos. of 50 KVA and 2 Nos of 60 KVA
9. How may ventilator fan motors are avialable in a EOG power car? (b)
   a. 3 b.4 c. 2 d.8
10. What is the rating of ventilator fan motor of EOg power car? (a)
   a.7 .5 HP b.5 HP c. 10 HP d.20 HP
11. High water tempertaure switch of diesel engine of Power car is set at what temperature? (d)
   a. 100 deg C b.99 deg C c. 95 deg C d 97 deg C
12. What does LLOP stand for? (a)
   a. Low lube oil pressure b.Low lube over pressure
   c. Low level oil pressure d.Lower level oil pressure
13. Over speed switch of diesel of EOg power car is set at _____ rpm? (b)
   a. 1500 +/- 5 % rpm b. 1800 +/- 4.5 % rpm
   b. 1800 rpm d. 1500 rpm
14. The UVR of alternator of power car operates at set voltage of _____? (c)
   a. 600 V b. 715 V c. 687 V d .650 V
15. What is the MPCB rating of radiator control panel? (d)
   a. 68A b. 75A c.40A d .63A
16. What is the rating of MPCB of ventilator panel? (b)
   a. 16A b.10A c. 5A d. 15A
17. Smoke detector in LHB power car works on _____V? (c)
   a. 24V DC b. 110V AC c. 110V DC d. 24V AC
18. What is the input voltage of SBCR (Starting battery charger) of Power car? **(c)**
   a. 110V DC b. 415 V AC c. 230V AC d. 110 V AC
19. WHat is the protections provided in alternator of power car? (d)
a.Short circuit b.Overload c.Earth Fault d. All the above

20.Frequency of SS-III schedule is - (c)
a) 2 years b) 3 years c) 6 years d) 5 years
21. Frequency of SS-II schedule is - (c)
a) 1 year b) 2 years c) 3 years d) 5 years
22. What do you mean by HOG system? (b)
a. High On generation b. Head on generation
c. Head over generation d. None of the above
23. In HOG system power is taken from _____? (a)
a. OHE b. DA Set
b. Adjacent coach d. None of the above
24. The radiator and ventilator control panel of Power car are _____? (a)
a. Star delta starter b. DOL starter
c. Capacitor start capacitor run starter d. None of the above
25. What is the present CPCB norms followed by diesel engines of EOG power car? (b)
a. CPCB I b. CPCB II c. CPCB III d. CPCB IV
26. What Is the abbrevation of CPCB ? (c)
a. Central population control board
b. Central pollution checking board
c. Central pollution control board
d. None

NON TECHNICAL

CONTENTS

Item No. Description page No.

1. ESTABLISHMENT - 122

2. STORES/ PROCUREMENT- 125

3. RAJBASHA HINDHI - 127

1.ESTABLISHMENT

1. What is the main object of the payment and wages Act ? (c)
a) Wages should be paid in time b) No unauthorized deductions from Wages
c) Both a and b d) None.
2. When payment and wages Act came in to operation w.e.f. in India? (c)
a)21.1.1937 b)21.2.1937 c)21.3.1937 d)21.4.1937
3. What are the permissible deductions from wages? (d)
a)Fine b)Deduction for absence from duty, towards damages or loss
c) Deduction of provident fund, advance& Loans d) All the above
4. What is the abbreviation of HOER? (a)
a)Hours of employment regulations b) Hours of employment rules
c) Hours of Employment roster d) none
5. Classification of HOER? (d)
a)Intensive b) Essentially intermittent c) Continues & Excluded d) All the above
6. What is the abbreviation of WCA? (b)
a) Worker compensation act b) Workmen's compensation act
c) Worker company act d) None
7. When factory act 1948 came in force? (d)
a) w.e.f. 1.1.1949 b) w.e.f 1.2.1949 c) w.e.f. 1.3.1949 d) w.e.f. 1.4.1949
8. What is mean by "suspension"? (a)
a) Suspension is an action where by railway servant is kept out of duty
b) Suspension is an action where by railway servant is remove from duty
c) Suspension is an action where by railway servant is dismissed from duty
d) None

1).Rule -3 of Service Conduct rule is related to (a)
a. General Conditions-devotion to duty integrity etc. b. Demonstration by Railway Servant
c. Employment of near relative; d. None of these.

2).According to Rule 5 of Conduct Rules Railway Servant (b)
a. Can be a member of Political Party b. Can not be a member of Political Party
c. none of these d. a&b
3). According to Rule -6 Railway Servant (b)
a. Can Criticize Govt. in public interest. b. Can not Criticize Govt. in public interest.
c. a&b d. none of these
4). According to Rule -13 A , of Services Conduct Rule a Railway Servant (c)
a. can not take dowry b. cannot accept dowry c. Both A& B d. none of these
5). According to Rule -13 A , of Services Conduct Rule a Railway Servant desires to file a defamation suit in his private capacity, he is (a)
a. Required to obtain permission before filing suit b. No permission required before filing suit
c. both a&b d. none of these
6). Condition regarding sale and purchase of immovable property mentioned in (c)
a. Rule-7 b. Rule-9 c. Rule-18 d. none of these
7).On Sports Quota recruitment is made in (c)
a. Group "B" b. Group "C" c. Group "C" & "D" d. none of these
8). Paternity leave can be sanctioned up to (c)
a. 12 days b.20 days c. 15 days. d. none of these
9). In respect of one disability special disability leave shall in no case exceed. (b)
a. 12 months b. 24 months c. 28 months d. none of these
10). Railway servant working in administrative office is entitled for casual leave (b)
a. 12 days b. 08 days c. 11 days d. none of these

11).The distances of transferred stations of Railway employee are 2025 KMs. He is entitled for joining time? (c)
a. 12 days b. 10 days c. 15 days d. none of these
12). School; pass are granted according to (b)
a. Calendar Year b. Academic Year c. financial Year d. none of these
13).The weekly duty hours of a clerk in the administrative office is (a)
a. 42 Hours b. 45 Hours c.40 Hours d.48 Hours
14).A running staff after performing 9 hours duty is entitled to rest at Head Quarter (c)
a. 12 Hours b. 14 Hours c.16 Hours d.10 Hours
15). The long on period in case of "continuous "staff is: **(b)**
a. 08 Hours b. 12 Hours c.14 Hours d.10 Hours
16)Railway staff is eligible for TA/DA if he goes out of his head quarter (a)
a. beyond 8 KM b. beyond 6 KM c. beyond 10KM d. none of these
17).Railway servant shall be entitled to (b)
a. 15 days LAP in a Calendar Year b. 30 days LAP in a Calendar Year
c. 20 days LAP in a Calendar Year d. none of these
18). Maximum limit for accumulation of LHAP is (d)
a.240 days b. 180 days c. 300 days d. No limit for accumulation

19). Leave not due may granted to Railway Servant at a time **(c)**
a.60 days b.90 days c. 360 days d. none of these

20).All kind of leave in one spell shall not exceed **(c)**
a. 02 years b.04 years c.05 years d. none of these.
21).Maximum Hospital leave granted to Railway Servant in one spell **(c)**
a. 24 months b.28 months c.12 months d. None of these
22). 04 set of PTO are admissible to **(a)**
a. all groups b. Group A& B officers only c. Group A, B & C only d. None of these
23).Maximum dependent permissible in privilege pass (a)
a. 2 b.3 c.4 d. none of these
24).The holder of Silver pass can travel in Ist AC (c)
a. Self only b. With his family up to 4 members. c. with wife d. None of these
25). Gazetted officer on retirement who completed of 26 years service eligible for post retirement complementary passes.
a. 03 sets b.04 sets c. 06 sets d. none of these
26).Member ship for clubs & Institute in Division is (a)
a. Optional b. Compulsory
c. On some division optional and on some Division Compulsoryd. None of these
27).Half day LAP is granted to (c)
a. Group C&D employees b. All Railway employees
c. Artisan staff of Workshop/Production unit d. None of these.
28).In which case special pass is not allowed **(d)**
a. sports tournament b. Territorial Army c. Union meeting d. None of these
29).DRM is empowered to sanction special casual leave up to **(a)**
a.90 days b.30 days c. 20 days d. None of these
30).For blood donation, special casual leave can be sanction for (c)
a.02 days b.03 days c. 01 day d.None of these
31).Group "C" &"D" employees are entitled for three sets of pass on **(c)**
a. On completion of 01 year service b. On completion of 01 years service
c. On completion of 05 years service d. None of these
32).Not entitle for running allowance (c)
a. Driver b. Shunter c. travelling ticket examiner d. Guard

33).Casual leave can be combined with **(a)**
a. special casual leave b. LAP c. Hospital leave d. None of these
34).Female Railway servant entitled for maternity leave for (c)
a. 90 days b.120 days c.180 days d. None of these
35).Composite transfer grant is permissible if VPU is used (b)
a. one month basic pay b. 80% of the basic pay c. 70 % of the basic pay d. None of these.
36).During special disability leave, full payment is made (a)
a. First 04months b. First 5 months c. First 6 months d. None of these
37).Recruitment in Group D category from open market is to be done by (c)
a. Divisional Office b. Railway Recruitment Board c. RRC d. None of these.

2.STORES/PROCUREMENT

1. For best Inventory performance results we must combine ABC analysis & VED analysis. Our first focus should be on (A)

A. Vital & A items B. Vital & C items C. Desirable & A items D. Desirable & C items

2. Stores Directorate in Rly Board is under (A)

A. Member (Mech) B. Member (Elect) C. Member (Staff) D. Financial Commissioner

3. Why is the ABC analysis important (B)

A. for improving service level B. for improving financial performance
C. to improve the profits D. none of the above.

4. For the stores declared surplus by a depot, any returned stores are (C)

A. not to be accepted. B. to be sent to any other depot where they are required.
C. to be accepted but credit is given only for scrap value.
D. a high level committee is to be set up for taking a decision.

5. Indian Railway stores code is in how many Volumes ? (A)

A. 2 B. 3 C. 4 D. 5

6. The pre-check of the purchase order by accounts department is necessary if the value is More than (D)

A. Rs. 5,00,000/- B. Rs. 4,00,000/- C. Rs. 1,00,000/- D. above Rs. 7,00,000/-

7. Which one of the following system of codification is followed by Indian Railway for codification of store items? (B)

A. Fully significant coding system B. Semi significant coding system
C. Non-significant coding system D. Colour codification coding system

8. In Indian Railways the case is to be dealt by tender committee, when it is a case of (D)

A. Open tender B. Limited tender C. Bulletin tender D. High value tender

8. When the firms are selected and tender enquiry is sent to them, it is a case of (B)

A. Open tender B. Limited tender C. Bulletin tender D. Global tender

9. In Indian Railways the case is to be dealt by tender committee when the purchase value is more than Rs. (D)

A. 10 lakhs B. 20 lakhs C.25 lakhs D. above 50 lakhs

10. In Indian Railways 'A' category items represent what percentage of total consumption value? (D)

A) 50 % B) 90% C) 65% D) 70%

11. PL No. of an item is 11360010. This item may be an item of (D)

A) Stationery B) Steam Locomotive C) Electrical item D) Diesel Locomotive

12. EOQ is the Quantity at which – (D)

A) Inventory carrying cost is maximum B) Warehousing cost is minimum
C) Inventory carrying cost + ordering cost is maximum
D) Inventory carrying cost + ordering cost is minimum

13. Tenders are to be invited for purchasing 12000 nos. of Chokes approx. rate of which is Rs. 90/- each. In this case we will normally invite - (A)

A) Open tender B) Limited tender C) Single tender D) No tender

14. In a PL No. the subgroup to which the item belongs to is represented by – (A)

A) First two digits B) 3rd and 4th digits C) 5th and 6th digits D) 2nd and 3rd digits

15. In ABC analysis of items, "A" category items represent (C)

A) Low consumption value items B) Important items
C) High Annual consumption value items D) High rate items

16. Buffer stock limit depends on – (A)

A) ABC classification of the item B) VED classification of the item
C) Combination of (A) & (B) D) Stock and Non-stock classification of the items

17. Buffer stock is provided – (A)
A) To meet unforeseen requirement B) To supply items to other users
C) To make good shortfall due to theft, deterioration D) To have items out of stock
18. In a VED analysis "V" stands for – (A)
A) Vague items B) Very costly items C) Vital item D) Variety of items
19. Indication of value in the demand is necessary (D)
A) for posting in liability register / fund register B) for knowing the appropriate approving authority
C) for the payment to the supplier D) combination of (A) & (B)
20. Item not required for the purpose for which it was originally purchased is known as – (C)
A) Inactive item B) Scrap item C) Over stock item D) Emergent stock item
21. An item having regular turnover caused by constant demand will be known as – (A)
A) Ordinary Stock Item B) Emergency stock item C) Regular item D) Non- stock item
22. Inactive items are those stock items, stock of which (C)
A) is unserviceable B) more than 3 months old
C) has not been issued to any user for past 12 months D) is more than the requirement of next 24 months
23. Principal Head of Stores Department on a Zonal Railway is – (A)
A) Principle Chief Materials manager B) Chief Controller of Stores
C) Controller of Stores D) Chief Controller of Stores and Purchases
24. Processing of a tender case after the opening of tenders depends on – (C)
A) Estimated value of purchase B) Value of the case as per highest offer
C) Value of the case as per lowest offer D) None of the above
25. An offer received from the firm to whom no inquiry was sent is known as – (C)
A) Single offer; B) Delayed offer; C) Unsolicited offer; D) Unapproved offer
26. Only one offer received in respect to Limited/ Open tender is known as – (C)
A) Single tender; B) PAC offer; C) Single offer; D) Late offer
27. Proprietary Article certificate is to be issued for the item required to be purchased from - (A)
A) Single firm only B) RDSO approved firms only C) Approved firms only D) None of the above
28. Items not required by the user can be returned on (A)
A) Advice note for returned stores B) Requisition C) Minus issue note D) Indent
29. Ordinary scrap items are those items which are (A)
A) Of no use in the railway B) Retained for railway's use
C) To be sold to the staff D) To be sold by public auction
30. On a railway, the items have been classified as A, B, C and V, E, D. While designing stock level limits for various items, we will provide to keep minimum safety stocks for – (A)
A) A-V Items C) C-V Items B) A- D Items D) C-D Items.
31. Materials not required are returned to the nominated stores depot as per stores code para number (B)
(a) S - 1539 (b) DS-8 (c) NS-11 (d) SS-11
32. Disposal of scrap may be done by (A)
(a) Auction (b) Sale by tender (c) Sale to other Govt. department and undertaking (d) All above.
33. Custody stores are the stores – (C)
(a) Which are kept under the custody of indentor (b) Custody stores are imprest stock items
(c) These are charged off stores but kept under the custody of stores depot awaiting future use.
(d) Custody stores are non-stock items which are surplus with the user
34. Standardisation helps in (D)
(a) Easy maintenance of equipment by suitable replacement
(b) It is easy for the supplier to manufacture the item with suitable technology
(c) Scale of economy can be achieved (d) All of them as above
35. PL No. of an item is 98-05-0400. This item may be an item of (D)
(a) Uniforms (b) Stationery (c) Steam Locomotive (d) Scrap

3.विभागीयपरीक्षाओंकेलिएराजभाषाप्रश्नऔरउत्तर
Questions and Answers on Rajbhasha for Departmental Examinations

1. भारतसंघकीराजभाषाक्या है? (ए)
What is the Official Language of the Union of India ?
उ: ए) देवनागरीलिपमें हिंदी बी) ब्रज भाषा सी) संस्कृत डी) ओडिया
Hindi/ in Devnagari Script.

2. संसदमेंसंविधानकाभागXVIIकिस तारीख़कोपारितहुआ? (ए)
On which date, Part XVII of the Constitution was passed in Parliament ?
उ: ए) 14.09.1949.बी) 14.09.1950 सी) 14.09.1963 डी) 14.09.1976

3. राजभाषा अधिनियम 1963 कबपारितहुआ?
When was the Official Languages Act 1963passed ? (बी)
उ: ए) 10.05.1949 बी) 10.05.1963 सी) 10.05.1952 डी) 10.05.1969

4. राजभाषाअधिनियम 1963 कबसंशोधितहुआ?
When was the Official Languages Act1963 amended ? (ए)
उ: ए) 1967 बी) 1963 सी) 1964 डी) 1976

5. राजभाषानियमोंकेतहतवर्गीकृततीनोंक्षेत्रकौनसेहैं ? (ए)
What are all the three regions classified under Official Language Rules ?
उ: ए) 'क', 'ख'ग' बी) य, र, ल, सी) एक, दो, तीन डी) क और ख
'A', 'B' and 'C' Regions.

6. हरसाल' हिंदी दिवस' कबमनायाजाताहै? (ए)
When is 'Hindi Day' celebrated every year ?
उ: ए) सितंबर 14 बी) जनवरी 26 सी) सितंबर 24 डी) फरवरी 14
ए) September 14. बी)

7. राजभाषानियमोंकेअनुसार, अंडमानऔरनिकोबारद्वीपसमूहकिसक्षेत्रकेअंतर्गतआताहै? (ए)
According to Official Language Rules, under which region Andaman & Nicobar Islands come?
उ: ए) 'क' बी) ख) ग डी) य
ए) 'A' Region.

8. क्षेत्र ख' केतहतवर्गीकृतकेंद्रशासितप्रदेशकौनसेहैं? (ए)
Which are the Union Territories classified under Region 'B' ?
उ: ए) केंद्रशासितप्रदेशचंडीगढ़, दादराऔरनगरहवेलीऔरदमनऔरदीव बी) अंडमान और निकोबार सी) श्रीलंका डी) जम्मुऔरकाश्मीर
ए) Union Territory of Chandigarh, Dadra & Nagar Haveli and Daman & Diu.

9. अरुणाचलप्रदेशकीराजभाषाक्याहै? (ए)
What is the Official Language of Arunachal Pradesh ?
उ: ए) अंग्रेजी बी) उर्दू सी) हिंदी डी) कश्मीरी
ए) English.

10 गैर-हिंदीभाषीलोगोंकोदिएगएआश्वासनोंकोकानूनीरूपदेनेकेलिएपारितअधिनियमक्याहै?
What is the Act passed to give legal form to the assurances given to Non-Hindi speaking people ? (ए)
उ: ए) राजभाषा (संशोधित) अधिनियम–1967 बी) राजभाषा (संशोधित) अधिनियम–1963
सी) राजभाषा (संशोधित) अधिनियम–1957 डी) राजभाषा (संशोधित) अधिनियम–1976

11. राजभाषाअधिनियमकीधारा 3(3) कबसे प्रभावी है? (ए)
From when did the Section 3(3)of Official Languages Act take effect ?
उ: ए) 26 जनवरी 1965 बी) 26 फरवरी 1966 सी) 26 जनवरी 1972 डी) 26 जनवरी 1959
ए) 26 January 1965.

12. राजभाषाअधिनियम 1963 कीधारा (IV) किससेसंबंधित है? (ए)
With which Section (IV) of Official Languages Act 1963 is concerned ?
उ: ए) संसदीयराजभाषासिमितकेगठनसेसंबंधितहै बी) संसद के गठन से संबंधित है
सी) हिंदी को राजभाषा बनाने से संबंधित है डी) राजभाषा के कार्यान्वयन से संबंधित है
ए) It is concerned with the Constitution of Parliamentary Committee on Official Languages.

13. राजभाषानीतिकीजानकारीदेनेवालेअनुच्छेद 343-351, संविधानकेकिसभागमेंहै ? (ए)
In which part of the Constitution are the Articles 343-351, that gave information about Official Language available ?
उ: ए) भाग–XVII (सात वे भाग में) बी) भाग–VII (दूसरा भाग) सी) भाग–XV (आठ वे भाग में)
डी) भाग–VII (पांच वे भाग में)
ए) Part XVII (In the Seventeenth Part).

14. राजभाषाअधिनियम 1963 कीधारा 7 कासंबंधकिसकेसाथहै? (ए)
With which Section 7of Official Languages Act 1963 is concerned ?
उ: ए) इसकासंबंधउच्चन्यायालयोंकेनिर्णयोंमेंहिंदीयाअन्यराजभाषाकेवैकल्पिकउपयोगसेहै बी) इसकासंबंध केंद्र सरकार के कार्यालयों में हिंदीयाअन्यराजभाषाकेवैकल्पिकउपयोगसे है सी) इसकासंबंध राज्य सरकार के कार्यालयों में हिंदीयाअन्यराजभाषाकेवैकल्पिकउपयोगसे है डी) इसकासंबंध केंद्र शासित राज्यों के कार्यालयों में हिंदीयाअन्यराजभाषाकेवैकल्पिकउपयोगसे है.
It is concerned with the optional use of Hindi or other Official Language in Judgements in High Courts.

15. राजभाषाअधिनियम 1963,कीधाराएं6 व7 किसराज्यमेंलागूनहींहोती है? (ए)
In which state, Sections 6 & 7 of Official Languages Act 1963 do not apply ?
उ: ए) जम्मू वकश्मीर बी) तेलंगाना सी) दिल्ली डी) तमिलनाडु
Jammu and Kashmir.

16. किन-किनराज्यों में उर्दूकोराजभाषाके रूप मेंघोषित कियागयाहै? (ए)
In which states, Urdu has been declared as Official Language ?
उ: ए) आंध्र प्रदेशवबिहार बी) तमिलनाडु व केरला सी) उत्तर प्रदेश व हरियाणा डी) जम्मू - कश्मीर व दिल्ली
ए) Andhra Pradesh & Bihar.

17. आठवींअनुसूचीमें सम्मिलितभाषाओंकेनाम लिखें (ए)
please write the languages Available in the 8th schedule.
उ: ए) 1. असिमया, 2. बंगला, 3. गुजराती 4. हिंदी 5. कन्नडा 6. कशमीरी 7. कोंकणी 8. मलयालम
9. मिणपुरी 10. मराठी 11. नेपाली 12. उडिया 13. पंजाबी 14. संस्कृत 15. सिंधी 16. तमिल
17. तेलुगु 18 उर्दू 19. बोडो 20. संथाली 21. मैथली
1. Assamese 2. Bengali 3. Gujarati 4. Hindi 5. Kannada 6. Kashmiri 7. Konkani 8. Malayalam
9. Manipuri 10. Marathi 11. Nepali 12. Odia 13. Punjabi 14. Sanskrit 15. Sindhi 16. Tamil 17. Telugu
Urdu 19. Bodo 20. Santhali 21. Mythili 22. Dogri.

18. 'कृपया 'बी' क्षेत्रकेअंतर्गत आनेवालेराज्योंकाउल्लेखकरें (ए)
Please mention the states coming under 'B' Region.
ए) गुजरात, महाराष्ट्र, पंजाब, चंडीगढ़, दादराऔरनगरहवेलीतथादमनऔरदीव
बी) आंध्र प्रदेश, कर्नाटक, तमिलनाडु सी) मध्यप्रदेश, केरला. ओडिसा डी) छत्तीसगड, उत्तर प्रदेश, राजस्थान
ए) Gujarat, Maharashtra, Punjab, Chandigarh, Dadra & Nagar Haveli and Daman & Diu.

19. वर्तमानमें संविधानकीआठवींअनुसूचीमेंकितनीभाषाओंकोसूचीबद्धकियागयाहै? (ए)
At present how many languages are enlisted in the Eighth Schedule of the Constitution ?
उ: ए) 22 बी) 24 सी) 25 डी) 28
20. संविधानकेभागV- मेंराजभाषा-नीतिसंबंधितउपबंध के किस अनुच्छेद में है? (ए)
In which Article is the provision regarding OL Policy available in Part-V of the Constitution ?
उ: ए) अनुच्छेद 120 बी) अनुच्छेद240 सी) अनुच्छेद 100 डी) अनुच्छेद90
A) Article 120 B) Article / 240 C) Article / 100 D) Article / 90
21. संविधानकीआठवींअनुसूची-संबंधी प्रावधानजिस में उपलब्ध है उस अनुच्छेद कानामबताइए (ए)
Name the article in which the provision of the Eighth Schedule of the Constitution is available.
उ: ए) अनुच्छेद 344(1) और 351 बी) अनुच्छेद342(1) और350 सी) अनुच्छेद244(1) और 251
ए) Article/ 344 (1) and 351.

22. राजभाषाअधिनियम (1963) क्योंपारितकियागया? (ए)
Why was the OL Act 1963 passed ?

उ: ए) 1965 केबादभीहिंदीकेसाथअंग्रेजीकाउपयोगकरनेकेलिए बी) 1965 के बाद अंग्रेजी के उपयोग को बंद करने के लिए सी) हिंदी के उपयोग को बंद करने के लिए डी) हिंदी और अंग्रेजी के उपयोग को तुरंत बंद करने के लिए
To use English along with Hindi even after 1965.
23. राजभाषानियमकबपारितहुआ? (ए)
When was the Official Language Rules passed ?
उ: ए) 1976. बी) 1963 सी) 1981 डी) 1952
24. संविधानकेभागXVII मेंकितनेअनुच्छेद हैं ? (ए)
How many Articles are there in Part XVIIof the Constitution ?
उ: ए) नौबी) दस सी) आठ डी) सात

25. अनुच्छेद344, केअनुपालनमें राजभाषाआयोगकागठनकबकियागयाथा? (ए)
In compliance of Article 344, when was the Official Language Commission formed ?
उ: ए) वर्ष 1955 मेंबी) वर्ष 1956 सी) वर्ष1963 डी) वर्ष 1976

26. राजभाषाआयोगका पहला अध्यक्ष कौन था ? (ए)
Who was the First Chairman of the Official LanguageCommission ?
उ: ए) श्री बी.जी. खेरबी) श्री डॉ.अम्बेडकर सी) श्री जी.बी.पंत डी) श्रीमती सरोजनी नायुडु

27. राजभाषाआयोगकीसिफारिशोंपरविचारकरनेकेलिए गठितसिमितिकेअध्यक्षकौनथे? (सी)

Who was the First Chairman of the Committee which was formed on the recommendation of the Official Language Commission ?
उ: ए) श्री बी.जी. खेरबी) श्री डॉ.अम्बेडकर सी) श्री जी.बी.पंत डी) श्रीमती सरोजनी नायुडु Shri. G.B.Pant.

28. संविधानकेअनुसारसांविधिकनियम, विनियमऔरआदेशोंकाअनुवादकौनकरताहै? /
As per the Constitution, who is translating the statutory rules, regulations and orders ? (ए)
उ: ए) विधिमंत्रालयबी) गृह मंत्रालय सी) रक्षा मंत्रालय डी) मानवसंसाधनमंत्रालय
ए) Law Ministry.
29. 1965 तकभारतसंघकेआधिकारिकउद्देश्यकेलिएराजभाषाऔरसहायक राजभाषाके रूप में कौनसी भाषाओं का उपयोगकियागयाथा? (ए)
Which was the main language and co-official language used for the Official Purpose of the Union of India up to1965 ?
उ: ए) अंगेज़ी-मुख्यराजभाषातथाहिंदी–सहायकराजभाषाबी) हिंदी - मुख्य राजभाषा तथा अंग्रेजी सहायक राजभाषा सी) अंगेज़ी-मुख्यराजभाषातथाउर्दू–सहायकराजभाषा डी) संस्कृतमुख्यराजभाषातथाहिंदी–सहायकराजभाषा
ए) English was the main language and Hindi was the co-official language.

30. भाग-VIमेंकौन-साअनुच्छेद है? (ए)
Which Article comes under Part-VI ?
उ: ए) अनुच्छेद 210 बी) अनुच्छेद370 सी) अनुच्छेद375 डी) अनुच्छेद 209
ए) Article/ 210

31. वर्ष 1973 मेंगठितप्रथमरेलवेहिंदीसलाहकरसमितिकीअध्यक्षताकिसनेकी? (ए)
Who chaired the First Railway Hindi Salahkaar Samiti constituted in 1973 ?
उ: ए) श्रीललितनारायणमिश्राबी) श्री राजेद्र कुमार सी) श्री आर.के. नारायण डी) श्री अब्दुल कलाम ए) Shri.Lalit Narayan Mishra.

32. वर्ष 1976 मेंगिठतसंसदीयराजभाषासिमित के अध्यक्ष कौनथे? (ए)
Who was the Chairman of the Parliamentary Committee on Official Language constituted in the year 1976 ?
उ: ए) तत्कालीनगृहमंत्रीश्रीओममेहता बी) श्रीललितनारायणमिश्रासी) श्री राजेद्र कुमार डी) श्री आर.के. नारायण ए) The then Home Minister Shri.Om Mehta.

33. संसदीयराजभाषासिमितकीकौनसीसमितिमसौदातैयारकरतीहै? (ए)
Which Committee of the Committee of Parliament on Official Language prepares the draft ?
उ: ए) संसदीयराजभाषासिमितकीआलेख एवं साक्ष्यउपसमिति बी) संसदीयराजभाषा सिमित सी) मसौदा समिति डी) नीति समिति
ए) Drafting & Evidence Sub-Committee of the Committee of Parliament on Official Language.

34. केआदेशकेअनुपालनमेंरेलवेबोर्ड द्वारा हिंदीसहायककापदकिसवर्षबनायागयाथा?
In which year the post of Hindi Assistant was created in Railway Board in compliance of President's Order ? (ए)
उ: ए) वर्ष1952 मेंरेलवेबोर्डकीसामान्यशाखा द्वारा बी) वर्ष 1965 में सी) वर्ष 1976 डी) वर्ष 1956
ए) General Branch of Railway Board in the year 1952.

35. किसवर्षमेंरेलबजटकाहिंदीअनुवादतैयारकियागयाथाऔररेलमंत्रीकौनथे?
In which year, the Hindi Translation of Railway Budget was prepared and who wasthe Railway Minister ? (ए)
उ ए) वर्ष1956, मेंस्वर्गीयश्रीलालबहादुरशास्त्री बी) वर्ष1956, मेंस्वर्गीयश्रीअब्दुल कलाम अज़ाद सी) वर्ष1956, श्रीमती सरोजिनी नायुडु डी) वर्ष1956, ज्ञानी ज़ैलसिह
ए) In the year 1956, Late Shri.Lal BahadurShastri.

36. रेलवेबोडमेंहिंदी (संसद) अनुभागकागठन कब हुआ था? (ए)
In which year, Hindi(Parliament) Section was established in Railway Board ?
उ: ए) वर्ष 1960 बी) वर्ष 1956 सी) वर्ष 1976 डी) वर्ष 1977
ए) In/ the year 1960.

37. राजभाषासंबंधीसंसदकीसमितिकीकौन-सीउप-समितिरेलवेमंत्रालयकानिरीक्षण करती है? (ए)
Which Sub-Committee of the Committee of Parliament on Official Language inspects Railway Ministry ?
उ: **ए) दूसरी उप समिति** बी) पहली उप समिति सी) तीसरी उपसमिति डी) चौथी उप समिति

38 .रेलवेबोर्डद्वाराहिंदीमेंकामकरनेकेलिएकौनसीयोजनालागूकीगईहै?
What is the scheme implemented by Railway Board for doing work in Hindi ? (ए)
उ: ए) राजभाषाव्यक्तिगत नकद पुरस्कार बी) राजीव गांधी पुरस्कार सी) राजभाषा शील्ड डी) गृहमंत्रालय व्यक्तिगत पदक **(ए) /Rajbhasha Individual Cash Award Scheme.**

39 राजभाषाविभाग केराभाकाससे क्यामतलबहै? (ए)
What is the expansion for OLIC used by Dept. of Official Language
उ: ए) राजभाषाकार्यान्वयनसमिति बी) राजभाषा संसदीय समिति सी) राजभाषा गृह मंत्रालय समिति डी) राजभाषा नियम समिति **ए) Official Language Implementation Committee.**

40. केंद्रीयसरकार के कर्मचारियोंकेलिएकितनेहिंदीपाठ्यक्रमनिर्धारितहैं
How many Hindi courses are prescribed for Central Govt. employees ? (ए)

उ: ए) तीनबी) चार सी) पांच डी) छ **ए) Three.**

41. केंद्रीयसरकारके कर्मचारियों केलिएनिर्धारितप्रारंभिकहिंदीपाठ्यक्रमकौनसाहै? (ए)
Which is the elementary Hindi course prescribed for Central Govt. employees ?

उ: ए) प्रबोध बी) प्रवीण सी) पारंगत डी) प्राथमिक **ए) Prabodh.**

42. केंद्र हिंदी समितिकेअध्यक्षकौनहै? (ए)
Who is the Chairman of Central Hindi Committee ?

उ: ए) प्रधान मंत्री बी) मुख्य मंत्री सी) शिक्षा मंत्री डी) राज्य मंत्री **ए) Prime Minister.**

43. किसीविशेषमंत्रालय / विभागमेंहिंदीकेप्रचारप्रसारमेंहुईप्रगतिकीसमीक्षाकौनसीसमितिकरतीहै (ए)
Which Committee reviews the progress made in the propagation of Hindi in a particular Ministry/Department ? (ए)

उ: ए) हिंदीसलाहकार समितिबी) हिंदी नियम समिति सी) गृह मंत्रालाय समिति
(डी) राजभाषा समिति**ए) HindiSalahkar Samiti.**

44. वर्तमानसंसदीयराजभाषासमितिकागठनकबहुआ था?
When was the present Parliamentary Committee on Official Language constituted ? (ए)
उ: ए) जनवरी 1976बी) जनवरी1956 सी) जनवरी1977 डी) जनवरी1982
ए) January 1976.

45. राजभाषाकीसंसदीयसिमितकेकितनेसदस्य हैं? (ए)
How many members are there in the Parliamentary Committee on Official Language ?
उ: ए) 30बी) 40 सी) 50 डी) 70

46. संसदीयराजभाषासिमितमेंलोकसभाकेकितनेसदस्य हैं? (ए)
How many Lok Sabhamembers are there in the Committee of Parliament on Official Language ?
उ: ए) 20बी) 31 सी) 42 डी) 65.

47. फिलहालराजभाषाकीसंसदीयसमितिकी कितनीउप- समितियां है? (ए)
At present, how many Sub-Committees are there in the Parliamentary Committee on Official Language ?
उ: ए) 3 उप-समितियां बी) 2 उप समितियां सी) केवल 01 उप समिति डी) उक्त कोई नहीं
ए) 3 Sub-Committees.

48. संसदीयराजभाषासमिति कामुख्यकर्तव्यक्या है? (ए)
What is the main duty of the Committee of Parliament on Official Language ?
उ. ए) हिंदीकेप्रगामीउपयोगकीसमीक्षा करना बी) हिंदी के उपयोग को केवल क्रेंद्र में लागू करना
(सी) हिंदी के उपयोग को कम करना डी) हिंदीकेप्रगामीउपयोगका प्रचार करना
ए) To review the progressive use of Hindi.

49. प्रमुखशहरोंमेंगठितटाउनराजभाषाकार्यान्वयनसमितिकेअध्यक्षकौनहैं? (ए)
Who is the Chairman of the Town Official Language Implementation Committee constituted in major cities ?
उ. ए) शहरकेकेंद्रसरकारकेवरिष्ठअधिकारी (बी) शहरकेराज्यसरकारकेवरिष्ठअधिकारी
(सी) शहरके स्थानिक एमएलए (डी) शहरके स्थानिक एमपी
(ए) SeniormostCentralGovernment Officer of the city.

50. नगरराजभाषाकार्यान्वयनसमितिकीबैठककीआवधिकताक्याहै? (ए)
What is the periodicity of the meeting of Town Official Language Implementation Committee ?
उ. ए) 3 महीनेमेंएकबारबी) 2महीनेमेंएकबारसी) 01महीनेमेंएकबार
डी) 6महीनेमेंएकबार**ए) Once/ in 3 months.**

51. राजभाषाकावार्षिककार्यक्रम कोकौनतैयारकरताहै? (ए)
Who prepares the Annual Programme on Official Language ?
उ. ए) गृह मंत्रालयबी) रेल मंत्रालय सी) संसदीय समिति डी) नगर राजभाषा समिति
ए) Ministry of Home Affairs.

52. केंद्रसरकारकेकर्मचारियोंकेलिए निर्धारितहिंदीपाठ्यक्रमक्याहै? (ए)
What are the Hindi courses prescribed for Central Govt.employees ?
उ. ए) प्रबोध, प्रवीण और प्राज्ञा /Prabodh, Praveen & Pragya.

53. केंद्रीयसरकारकेलिपिकसंवर्गकर्मचारियोंकेलिएनिर्धारितअंतिमहिंदीपाठ्यक्रमकौनसाहै?(ए)
Which is the final Hindi course prescribed for clerical cadre employees of Central Govt.?
उ. ए) प्राज्ञा **(Pragna)** बी) पारंगत सी) प्रबोध डी) विशारद

54. एककेंद्रीयसरकारके कर्मचारी केलिएहिंदीपाठ्यक्रमोंमेंप्रशिक्षितहोनेकेलिएउपलब्धप्रशिक्षणसुविधाएंक्याहै? (ए)
What are the training facilities available to a CentralGovt. employee to get trained in the Hindi courses ?
उ. ए) नियमित, गहन, पत्राचारऔरनिजीपाठयक्रम बी) गहन पाठ्यक्रम सी) पत्राचार डी) नियमित
ए) Regular, Intensive, Correspondence and Private.

55. एकवर्षमेंकितनीबारनियमितहिंदीपरीक्षाआयोजितकीजातीहै? (ए)
How many times are the Regular Hindi examination conducted in a year ?
उ. ए) दोबारबी) तीन बार सी) चार बार डी) एक बार**ए) 2 Times**.

56. नियमितहिंदीपरीक्षाएंकिनमहीनोंमेंआयोजितकीजातीहैं? (ए)
In which months, Regular Hindi examinations are conducted ?
उ. ए) मईवनवंबरबी) जून व जुलाई सी) अगस्त व सितंबर डी) दिसंबर-अप्रैल
ए) May & November.

57. हिंदीपाठ्यक्रमोंमेंप्रशिक्षितहोनेकेलिएकौनपात्रहैं? (ए)
Who are eligible to be trained in the Hindi courses ?
उ. ए) केंद्र सरकार के तृतीयश्रेणीऔरउससेऊपरकेकर्मचारी बी) केंद्र सरकार के द्वितीयश्रेणीऔर उससेऊपरकेकर्मचारी सी) प्रथम श्रेणी के कर्मचारी डी) कोई नहीं
ए) All the Central Govt.employees in Class III and above.

58. श्रेणी 'क' केतहत कौनसेकर्मचारीवर्गीकृतहैं ? (ए)
Who are all the employees classified under Category 'A' ?
उ. ए) वेकर्मचारीजिनकीमातृभाषाहिंदीयाहिंदुस्तानीयाउनकीबोलीहै बी) जिनकीमातृभाषाबांग्ला है सी) जिनकीमातृभाषागुजराती है डी) जिनकीमातृभाषातमिल है
ए) Those employees whose mother tongue is Hindi or Hindustani or its dialect.

59. 'कौनसेकर्मचारी 'ख' श्रेणीकेतहतवर्गीकृतहैं? **(ए)**
Who are all the employees classified under Category 'B' ?
उ. ए) वेकर्मचारीजिनकीमातृभाषाउर्दू, पंजाबी, कश्मीरी, पुश्तो, सिंधीयाअन्यसंबद्धभाषाएँहैं
बी) वेकर्मचारीजिनकीमातृभाषाहिंदीयाहिंदुस्तानीयाउनकीबोलीहै
सी) जिनकीमातृभाषागुजराती है डी) कोई नहीं
ए) Those employees whose mother tongue is Urdu, Punjabi, Kashmiri, Pushto, Sindhi or other allied languages.

60. 'कौनसेकर्मचारी 'ग ' श्रेणीमेंआतेहैं? **(ए)**
Who are all the employees classifiedunder Category 'C' ?
उ. ए) जिनकीमातृभाषामराठी, गुजराती, बंगाली, उडियायाअसमियाहै बी) जिनकी मातृभाषा तेलुगु है सी) जिनकी मातृभाषा कन्नड है डी) उक्त कोई नहीं
Those employees whose mother tongue is Marathi, Gujarati, Bengali, Oriya or Assamese.

61. 'कौनसेकर्मचारीग ' श्रेणीमेंआतेहैं? **(ए)**
Who are all the employees classifiedunder Category 'D' ?
उ. ए) वेकर्मचारीजोदक्षिणभारतीयभाषायाअंग्रेजीबोलतेहैं बी) जो भारतीयभाषाबोलतेहैं सी) वेकर्मचारीजोहिंदीबोलतेहैं डी) उक्त कोई नही
Those employees who speak a South Indian Language or English.

62. श्रेणी 'सी' केकर्मचारीकोकिसपाठ्यक्रम सेप्रशिक्षितहोनाआवश्यकहै? (ए)
From which course a Category 'C' employee is required to be trained ?
उ. ए) प्रवीण बी) पारंगत सी) प्रबोध डी) प्रज्ञा**ए) Praveen.**

63. श्रेणी 'घ' केकर्मचारीकोकिसपाठ्यक्रम सेप्रशिक्षितहोनाआवश्यकहै? (सी)
From which course a Category 'D' employee is required to be trained ?
उ. ए) प्रवीण बी) पारंगत सी) प्रबोध डी) प्रज्ञासी) Prabodh.

67. प्रज्ञाकोपासकरनेकेलिएएकमुश्तपुरस्कारक्याहै? (ए)
What is thelumpsum award for passing Pragya ?
उ. ए) रु 2400/- बी) रु 2800/- सी) रु 3200/- डी) रु 4600/--
उ. सामूहिकनकदपुरस्कारयोजनाकेतहतप्रथमपुरस्कारकेलिएनकदपुरस्कारराशिक्याहै? **(ए)**
उ. **What is the Cash Award amount for the first prize under Collective Cash award Scheme ?**
उ.ए) रु 1500/-बी) 2000 रुपए सी) 1000 रुपए डी) कोई नहीं

68. सामूहिकनकद पुरस्कार योजनाकेतहतद्वितीय पुरस्कारकेलिएनकदपुरस्कारराशिकितनीहै? (ए) What is the Cash Award amount for the second prize under Collective Cashaward Scheme ?
उ. ए) रु.1200/- बी) रु.1500 सी) 1000 रु/- डी) 1600रु/-

69. सामूहिकनकद पुरस्कार योजनाकेतहततीसरे पुरस्कारकेलिएनकदपुरस्कारराशिकितनीहै? (ए)
What is the Cash Award amount for the third prize under Collective Cash award Scheme?
उ. ए) 800 रु बी) 1000/-रु सी) 1200/-रु डी) कोई नहीं

70. एकइकाईमें10,000 सेअधिकशब्दलिखनेकेलिएएकवर्षमेंकितनेप्रथमपुरस्कारदिएजातेहैं? (ए)
How many first prizes are given in a year for writing more than 10,000 words in one unit ?
उ. ए) दो/Two बी) चार सी) पांच डी) कोई नहीं

71. एकइकाईमें10,000 सेअधिकशब्दलिखनेकेलिएएकवर्षमेंकितनेद्वितीयपुरस्कार दिएजातेहैं? (ए)
How many second prizes are given in a year for writing more than 10,000 words in one unit ?
उ. ए) तीन/Threeबी) चार सी) पांच डी) कोई नहीं

72. एकइकाईमें10,000 सेअधिकशब्दलिखनेकेलिएएकवर्षमेंकितनेतृतीयपुरस्कारदिएजातेहैं? (ए)
How many third prizes are given in a year for writing more than 10,000 words in one unit ?
उ. ए) पांच/Fiveबी) चार सी) पांच डी) कोई नहीं

73. किसक्रममेंनाम, पदनामऔरसाइनबोर्डप्रदर्शितकिएजानेहैं? (डी)
In whichorder Name, Designation and Sign Boards are to be exhibited ?
उ. ए) प्रादेशिकभाषा बी) हिंदीसी) अंग्रेजी डी) उक्त ए, बी, सी क्रम में

74. आम जनता द्वारा प्रयुक्त किए जाने वाले फार्मकिस भाषा में तैय्यार किया जाना है (ए)
ए) त्रिभाषीरूप (1 प्रदेशिक 2.हिंदी 3.अंग्रेजी (बी) केवल हिंदी सी) अंग्रेजी डी) प्रदेशिक
ए) Trilingual form (1.Regional Language2.Hindi 3.English).

75. रबरस्टैम्पकिसक्रममेंतैयारकिएजानेहैं?/ In which order Rubber Stamps are to be prepared ? (ए)
उ. ए) हिंदी-अंग्रेजीद्विभाषी-एकपंक्तिहिंदीऔरएकपंक्तिअंग्रेजी बी) दोनो पंक्तियां अंग्रेजी में सी) दोनो पंक्तियां हिंदी में डी) कोई नहीं
ए) Hindi-English Bilingual from-one line Hindi and one line English.

76. निजीअध्ययनद्वाराप्रबोध, प्रवीणऔरप्रज्ञाकोउत्तीर्णकरनेकेलिएपुरस्कारकीराशि कितनी है? (ए)
Amount of lump sum award for passing Prabodh,Praveen and Pragya by private study.ए) प्रबोध/Prabodhरु1600/-प्रवीण/Praveenरु1500/-प्राज्ञा/Pragya रु 1200/- प्रत्येक के
बी) प्रबोध/Prabodhरु1200/-प्रवीण/Praveenरु1300/-प्राज्ञा/Pragya रु1100/- प्रत्येक के लिए
सी) प्रबोध/Prabodhरु800/-प्रवीण/Praveenरु850/-प्राज्ञा/Pragya रु600/- प्रत्येक के For each.

77.निजीअध्ययनद्वाराहिंदीटंकणपरीक्षाउत्तीर्णकरनेकेलिएप्राप्त होनेवाली एकमुश्त पुरस्कार राशि क्याहै?
उ. What is the lumpsum award for passing Hindi Typewriting Examination by private study ? (ए)
उ. ए) रु 1600/-बी) रु 1400/- सी) 1300/- डी) रु 1100/-

78. आठवींअनुसूचीमेंशामिलविदेशीभाषाक्याहै?What is the Foreign Language included in the Eight Schedule ? (ए)
ए) नेपालीबी) बंगला सी) भोजपुरी डी) तुलु ए) Nepali.

79. कौनसामंत्रालय/कार्यालयकेंद्रीयसरकारकेकर्मचारियोंकेलिएपरीक्षाकाआयोजनकरताहै? (ए)
Which Ministry /Office is conducting the exams. for the Central Govt.employees?
उ. ए) गृहमंत्रालयकेअधीनहिंदीशिक्षणयोजना बी) रेलमंत्रालयकेअधीनहिंदीशिक्षणयोजना सी) शिक्षा मंत्रालयकेअधीनहिंदीशिक्षणयोजना डी) कोई नहीं
उ. **ए) /Hindi Teaching Scheme underHome Ministry.**

80.एकमुश्तपुरस्कारकेलिएकौन पात्रहै/Who is eligiblefor lump sum award ? (ए)
उ. ए) वेकर्मचारीजोनिजीप्रयासोंसेहिंदीकीपरीक्षापासकरतेहैं बी) वेकर्मचारीजोविभागीय प्रयासोंसेहिंदीकीपरीक्षापासकरतेहैं सी) केंद्र सरकार के सभी कर्मचारी डी) हिंदी परीक्षापासकरनेवाले केंद्र सरकार के सभी कर्मचारी
(ए) Thoseemployeeswho pass the Hindi exams by private efforts.

81. स्टेशनकीघोषणाएँकिसक्रममेंकीजातीहैं? (ए)
In which order are the Station announcements made ?
उ. ए) त्रिभाषी (क्षेत्रीय, हिंदीऔरअंग्रेजी) बी) द्विभाषी (हिंदी और अंग्रेजी)
सी) केवल हिंदीडी) किसी भी भाषा में **ए) Trilingual (Regional, Hindi & English)**

82.रूफबोर्डकोकिसअनुपातमेंप्रदर्शितकियाजानाहै? (ए)
In which proportion the Roof Board has to be displayed ?
उ. ए) समानअनुपातमें-त्रिभाषा (क्षेत्रीय, हिंदीऔरअंग्रेजी) बी) दो समान भागों में
सी) किसी भी अनुपात में डी) केवल क्षेत्रीय भाषा में
ए) In equal proportion-Trilingual (Regional, Hindi & English).

83.ट्रेनकापैनलबोर्डकिस प्रकारप्रदर्शितकियाजानाहै? (ए)
How the Panel Board of a train has to be displayed ?
उ. ए) त्रिभाषी (क्षेत्रीय, हिंदीऔरअंग्रेजी) में बी) द्विभाषी ((क्षेत्रीय, हिंदी) में
सी) द्विभाषी ((हिंदी और अंग्रेजी में) डी) किसी भी भाषा में
ए) InTrilingual (Regional, Hindi & English).

84. व्यक्तिकवेतनकेलिए कौनपात्रहैं? (ए)
Who all are eligible for Personal Pay ?
उ. ए) केंद्रसरकारकेएचटीएसद्वाराआयोजितप्रज्ञापरीक्षायानिर्धारितपरीक्षाउत्तीर्णकरने पर, केंद्रसरकारद्वारा कुछश्रेणियोंकेलिएनिर्दिष्ट% अंकोंकोप्राप्त करने पर बी) प्रवीण परीक्षा पास करने पर सी) पारंगत परीक्षा पास करने पर डी कोई नहीं
ए) passing Pragya Examination organized by the HTS of the Central Government or on passing the prescribed exam. Duly securing the specified % of marks for certain categories by the Central Government.

85. हिंदीवार्तालापपाठ्यक्रममेंप्रशिक्षणलेनेकेलिएकौनपात्रहैं? (ए)
Who are eligible to undergo training in Hindi conversation course ?
उ. ए) सभीओपनलाइनकर्मचारी (क्लास- IV सहित) जोसीधेजनताकेसंपर्कमेंआतेहैं बी) केंद्र सरकार के सभी कर्मचारी सी)
All the open line staff (including Class-IV) who come in contactwith public directly.

86. केंद्रसरकारकेअधिकारी/कमचारियोंको हिंदी प्रशिक्षण क्यों दियाजाताहै? (ए)
Why training in Hindi is imparted to Central Government Officers/Employees?
उ. ए) ताकिवे हिंदीमेंअपना दैनंदिनकामकरेंबी) ताकि उन के वेतन में वृद्धि हो
सी) ताकि पदोन्नति मिले डी) कोई नहीं
ए) By which they can do their day-to-day work in Hindi.

87. हिंदीवार्तालापपाठ्यक्रमकीअवधि क्याहै? / What is the duration for Hindi conversation course? (ए)
उ. ए) 30 घंटेबी) 20 घंटे सी) 40 घंटे डी) कोई नहीं ए) 30 Hrs.

88. हिंदीकार्यशालामेंप्रशिक्षणलेनेकेलिएकौनपात्रहै?Who are eligible to undergo training in Hindi Workshop ? (ए)

उ . ए) सभीग्रूप-III औरराजपत्रितकर्मचारीजिन्हेंहिंदी का कार्य साधक ज्ञान/प्रवीणता प्राप्तहै.बी) सभी केंद्र सरकार के कर्मचारी सी) केवल ग्रूप- सी वर्ग के कर्मचारी डी) केवल अधिकारी

89. एकआशुलिपिक, जिसकीमातृभाषाहिंदीनहींहै, को हिंदीआशुलिपिक परीक्षाउत्तीर्णकरनेपरव्यक्तिकवेतनकितनादियाजाताहै? (ए)
What is the Personal Pay given for passing Hindi Stenography , to a stenographer whose mother tongue is not Hindi ?
उ . ए) 12 महीनेकीअवधिकेलिए2 वेतनवृद्धियोंकेबराबरव्यक्तिगतवेतन
बी) 1200/रु प्रति माह सी) दो वर्षों की अवधी के लिए 01 वेतन वृद्धि के बराबर डी) कोई नहीं

ए) Personal Pay equivalent to 2 increment for a period of 12 months.

90. हिंदीटाइपिंग / स्टेनोद्वाराकियाजानेवालेहिंदीटाइपिंगकेकार्य की मात्रा हिंदीप्रोत्साहनभत्ता केलिएपात्रबननेकेलिएक्याहोनी चाहिए ? (ए)
What is the quantum of Hindi Typing work to be done by aTypist/Steno to become eligible for Hindi incentive allowance ?
उ . ए) हिंदी में प्रतिदिन 5 नोटयातिमाही में 300 नोट बी) हिंदी में प्रतिदिन01नोटयातिमाही में100नोट सी) हिंदी में प्रतिदिन03नोटयातिमाही में200नोट डी) कोई नहीं
ए) 5 Notes in Hindi in a day or300 notes in Hindi in a quarter.

91.90%या उस से अधिकऔर 95% सेकमअंकसिहतहिंदीटंकणपासकरनेपरमिलनेवालानकद पुरस्कार क्याहै? What is the amount of Cash Award for passing Hindi Typing with 90% or more but less than 95% marks ? (ए)
उ.ए) रु 400/-बी) 600 रु/- सी) 700/- रु

92.हिंदीआशुलिपि में 95%सेअधिकअंक प्राप्तकरनेपरकितनानकदपुरस्कारमिलेगा
What is the amount for passing Hindi Stenography with 95% or more marks ? (ए)
उ . ए) रु1200/-बी) 1500 रु/- सी) 1800/- रु डी) उक्त कोई नहीं

93. अंशकालिक हिंदीपुस्तकपालको दियाजानेवालामानदेय क्याहै? (ए)
What is thehonorarium amount given to Part-time Hindi Librarian ?
उ. ए) रु 500/- प्रति माह बी) 1000/- रु प्रति माह सी) 200/- रु प्रतिमाहPer month डी) कोई नहीं

94. हिंदीआशुलिपि परीक्षापासकरनेपर मिलनेवालाएकमुश्त पुरस्कार कितना है ? (ए)
What is the lump sum award given for passing Hindi Stenography Examination ?
उ . ए) हिंदी आशुलिपिरु 1500/- बी) हिंदी आशुलिपिरु 1100/- सी) हिंदी आशुलिपिरु 2000/-डी) कोई नहीं
ए) Hindi Stenography R0 1500/-

THE END