Question Bank for LDCE examination to the post of Loco Inspector in GP4800/-

1. For the protection of single – phase 1.5kW motor, a MCB of --------rating should be provided.

   a. 10 A b. 16 A c. 32 A d. 63A

2. The low power factor results in

   a. Increase losses b. Decreased losses
   c. No effect on losses d. Better generating efficiency.

3. Low power factor

   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

   a. Synchronous generator
   b. Universal motor
   c. Synchronous condenser
   d. SCR

5. A distribution line of 440 V is classified as

   a. LV b. MV c. HV d. EHV

6. Which of the following is not used as overhead conductor

   a. ACSR b. Weasel c. Pilca d. Zebra

7. Which of the following reduces the power factor

   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

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

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

a. 40 deg. C b. 50 deg. C c. 60 deg.C d. 70 deg. 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

a. 3 kV b. 4 kV c. 5 kV d. 6 kV

12. Unit of energy is

a. Kilo volt hours b. Kilo watt hours c. Kilo watt

13. As per Ohm's law

a. V=IR b. V= I/R c. R=VxI

14. Unit of resistance is

a. ampere b. Volts c. Ohm

15. In three phase 415 Volts 50 Hz supply, the phase to phase voltage is

a. 220 Volts b. 415 Volts c. 440 Volts

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

a. 220 Volts b. 230 Volts c. 440 Volts

17. In 4 sq. mm PVC wire , 4sq.mm stand for

a. Thickness of wire b. Length of wire c. The area of thickness of wire

18. The instrument to measure the light is called.

a. Tong tester b. Lux meter c. Micro meter

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

a. 10 Units b. 20 units c. 5 units

20. No. of poles in MCB/TPN is

a. 2 poles b. 4 poles c. 3 poles

21. AC is converted into DC by

a. Dynamo b. Motor c. Transformer d. Rectifier

22. Farad is a unit of

a. Flux b. Capacitance c. Mutual inductance d. Resistance of a conductor

23. A kilowatt-hour is a unit of

a. Energy b. Electrical potential c. Power d. Electric current

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

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 or earthed.

26. In house wiring the red wire indicates the

a. Phase b. Neutral c. Earth Wire d. Dead wire.

27. In house wiring the black wire indicates the

a. Phase b. Neutral c. Earth Wire d. Dead wire.

28. In house wiring the green wire indicates the

a. Phase b. Neutral c. Earth Wire d. Dead wire.

29. In 4 wire electric circuit, the black conductor is used for

a. Phase b. Neutral c. Earth wire d. Armour

30. In cabling system the earth is connected with conductor having colour

a. Red b. Blue c. Yellow d. Armour

31. Unit of current is

a. Watt b. Ampere c. Volt d. Ohm

32. Heater element is made up of

a. Tin b. Nichrome c. Silver d. Any above

33. Filament of incandescent lamp is made of

a. Tin b. Nichrome c. Tungusten d. Silver

34. An insulator should have

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.

a. Solder b. PG clamp c. Thimbles d. All above

36. Instrument used for measuring the speed of rotating machines / appliances is

a. Lux meter b. Tachometer c. Micro meter d. None above

37. Instrument used for measuring the thickness of wire / strip is

a. . Lux meter b. Tachometer c. Micro meter d. None above

38. Instrument use for measuring the voltage across a circuit is

a. . Ammeter b. Voltmeter c. Thermometer d. None above

39. Instrument used for measuring the current is

a. . Ammeter b. Voltmeter c. Thermometer d. None above

40. Instrument used for measuring the temperature is

a. . Ammeter b. Voltmeter c. Thermometer d. None above

41. Illumination level is measured in terms of

a. Lux. B. Volt c. Ampere d. Ohm

42. Insulating resistance is measured by using

a. Multimeter b. Megger c. Voltmeter d. Hydrometer

43. Which of the following is used for rectification of AC supply

a. Diodes b. Transistor c. Capacitor d. Resistors

44. Which preparation should be done starting a new wiring

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. Phase b. Neutral c. Earth d. Any of the above

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

a. IR test b. Continuity test c. Polarity test d. All above

47. Which of the following is a common wiring fault

a. Short circuit b. Open circuit c. Fuse blown d. All above

48. Wattage rating range of electric kettle is

a. 50-500W b. 350-1000 c. 1000-1500 d. 1200 – 1600

49. Device used for auto off an electric iron is

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

50. Can you repair an immersion rod.

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

51. A wire gauge is used to measure diameter of

a. Wire b. Cable c. OH conductor d. Any above

52. To improve the power factor, capacitors are connected in the 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. 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. Resistors are connected in parallel b. Resistors are connected in series
c. Resistors are connected in series d. none of the above.

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

a. 100 W b. 60 W c. Both will give same light d. None of the both will glow.

56. Power is defined as

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 power is

a. Kilowatt b. Watt c. Kilowatt hour d. Watt hour

58. The internal resistance of battery is increased by

a. Increase in no. of cells b. Decrease in no. of cells c. None of the above

59. A generators converts

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

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

a. Zero b. Infinity c. Less than 1 Ohm d. None above

62. Laminated core is used to reduce

a. Hysterisis loss b. Eddy current loss c. Copper loss d. Iron loss

63. Which of the following is not a non conventional energy source

a. Solar b. Bio gas c. Wind d. Electricity

64. Solar energy is used for

a. Lighting b. Cooking c. Battery charging d. all above

65. Solar and wind hybrid system is

a. Becoming popular b. Not possible
c. Conventional energy source d. None of the above

66. Bio gas depends on

a. Electrical energy b. Waste products c. Both a & b d. None of the above

67. Which of the following is not a constituent of a solar lighting system

a. Photo voltaic cell b. Back up batteries c. Charger d. Earth wire.

68. Which of the following is not a type of fuse

a. HRC b. Rewirable c. Ceramic d. None above

69. Which of the following is not a type of generating station?

a. Thermal b. Nuclear c. Hydro d. Atmospheric

70. Which of the following is not a part of overhead distribution line

a. Conductor b. Insulator c. Cross arms d. Thimbles

71. Type of insulator not used in a 3 phase, 440 V overhead distribution line

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. Current transformer b. Potential transformer
c. Excitation transformer d. None of the above

73. Capacitor opposes

a. Instantaneous change of voltage b. Instantaneous change of current
c. Instantaneous change in resistance d. None of the above

74. Inductor opposes

a. Instantaneous change of voltage b. Instantaneous change of current
c. Instantaneous change in resistance d. None of the above

75. Current is

a. Rate of flow of charge b. Gradual change in resistance
c. Linear change in capacitance d. None of the above.

76. When resistance are connected in parallels, the equivalent resistance

a. Decreases b. Increases c. No change d. May increase or decrease

77. When resistance are connected in series, the equivalent resistance

a. Decreases b. Increases c. No change d. May increase or decrease

78. Diode allows the flow of the current

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

a. Decreases b. Increases c. No change d. May increase or decrease

80. When capacitances are connected in series, the equivalent capacitance

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 series to a supply 220V, thecurrent flowing in the circuit will be

a. 1A 2. 2 A 3. 3 A 4. 4 A

82. A 2 x 40 W box type fitting glows for 10 hrs in a day, unit consumed per day will be

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.

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. 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

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 consumer per day will be

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 June @ Rs.3/- per unit will be Rs.

a. 1.2 b. 1.8 c. 2.1 d. 2.4

88. A geyser of 25 ltrs., 1500W remains ON for 2 hrs per day, units consumer for 6 month will be

89. One 60 W lamp and 2 fans works for a10 hrs per day units consumer per day will be

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

a. 223.8 b. 2.23 c. 22.38 d. 22.83

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

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

a. 0.5 W b. 1 W c.5 W d. 50 W

93. The resistance of human body lies between

a. 100- 200 Ohm b. 5K Ohm – 50 K Ohm
c. 1 M ohm – 10 M Ohm c. 100 k Ohm – 500 k Ohm

94. Instrument used to measure electric energy consumption si

a. Galvanometer b. Potentiometer
c. Energy meter d. none of the above

95. Which of the following keeps the poles straight

a. Stay rod b. Crosss arm c. Conductor d. Insulator

96. Inside the geyser there is a

a. Filament b. Immersion rod c. any of a & b.

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

a. PVC conduit b. GI pipe c. Spun concrete pipe d. None of the above

98. The size of copper wire used for point wiring in sq. mm is

a. 1.5 b. 2.5 c. 4 d. 10

99. The size of copper wire used for sub main in sq. mm is

a. 1.5 b. 2.5 c. 4 d. 10

100. The size of Aluminium wire used for point wiring in sq. mm is

a. 1.5 b. 2.5 c. 4 d. 10

Indian Electricity Rules (IER)

1. The maximum variation allowed in voltage of LV & MV AC supply is

a. ± 2% b. ± 3% c. ± 4% d. ± 5%

2. The maximum variation allowed in voltage of HV EHV AC supply is

a. ± 8.5% b. ± 10.5% c. ± 12.5% d. ± 14.5%

3. The maximum variation allowed in frequency of AC supply is

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

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

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

a. 17 ft b. 18 ft c. 19 ft d. 20 ft

7. Clearance of the lowest conductor (alone the street) from the ground for HT lines should be

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

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

a. 4 ft b. 6 ft c. 8 ft d. 12 ft

10. Clearance of the lowest conductor Horizontal above the building for LT and MT lines should be

a. 4 ft b. 6 ft c. 8 ft d. 12 ft

11. Clearance of the lowest conductor Horizontal above the building for HT lines should be

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

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

a. 1.3 " b. 1.6 " c. 2 " d. 2'.6 "

14. The on line vertical spacing between the conductors for 11kV lines should be

a. 1.3 " b. 1.6 " c. 2 " d. 2'.6 "

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

a. 1.3 " b. 1.6 " c. 2 " d. 2'.6 "

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

a. 1.3 " b. 1.6 " c. 2 " d. 2'.6 "

17. The on line horizontal spacing between the conductors for 11kV lines should be

a. 1.3 " b. 1.6 " c. 2 " d. 2'.6 "

18. The clearance between the conductor and pole for 400/230V, 150 ft span lines , should be
a. 6 " b. 9 " c. 12 " d. 1'. 3 "

19. The clearance between the conductor and pole for 400/230V, 150-250 ft span lines , should be
a. 6 " b. 9 " c. 12 " d. 1'. 3 "

20. The clearance between the conductor and pole for 11kV lines , should be

a. 6 " b. 9 " c. 12 " d. 1'. 3 "

SAFETY

1. First step to be carried out before starting work starting work on faulty portion of overhead line is to

    a. Earthing 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.

2. Before starting the work on faulty circuit it should be ensured that

    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.

3. The electric overhead line on which work is to be carried out should be necessarily earthed on both the ends to

    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

4. One can protect himself from electric shock while working on live circuit by wearing gloves of good

    a. Conducting material b. Insulating material
    c. Semiconductor material d. Any of the above

5. Which of the following are principal safety precautions ?

    a. Don't touch live wire or equipment with bare hands
    b. Before switching on supply, see no one is working in the line
    c. Use rubber gloves and metting
    d. All of the above

6. Which of the following is most effective method of artificial respiration ?

    a. Mouth to mouth air pumping method b. To use bicycle air pump

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

7. Which material is recommended as fire extinguisher in electrical cases?

a. Carbon tetra chloride
b. Carbondioxide
c. Sulphur hexafluoride
d. Any of the above

8. Which of the following is to be necessarily kept in an electric substation?

a. First aid box
b. Stretcher
c. Earthing rod
d. All of the above

9. The warning board to be provided, on the switch of the line on which work is going on

a. Man working
b. Danger
c. Keep away
d. None of the above

10. Staff competent to work on overhead line of MV should be

a. Unskilled
b. Semi skilled
c. Highly skilled
d. Any of the above

EARTHING

1. The code of practice for earthing is governed by

a. IS: 3043 b. IS :4340 c. IS: 4340 d. IS : 4440

2. The length of pipe electrode used for earthing should not be less than

a. 3.5 m b. 4 m c. 4.5 m d. 5 m

3. As per IS, the earthing electrode shall nor be within a distance of-------- mtrs from any building being earthed.

a. 0.5 m b. 1-Ohm c. 1.5 Ohms d. 2 Ohms

4. Maximum permissible earth resistance at large power stations is

a. 0.5 m b. 1-Ohm c. 2 Ohms d. 8 Ohms

5. Maximum permissible earth resistance at major power stations is

a. 0.5 m b. 1-Ohm c. 2 Ohms d. 8 Ohms

6. Maximum permissible earth resistance at small power stations is

a. 0.5 m b. 1-Ohm c. 2 Ohms d. 8 Ohms

7. Maximum permissible earth resistance for buildings is

a. 0.5 m 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

a. 0.5 m b. 1-Ohm c. 2 Ohms d. 8 Ohms

9. The plate electrode of copper used for earthing should be with minimum size

a. 50 cm x 50 cm x 3.15 mm b. 50 cm x 50 cm x 6.3.mm
c. 60 cm x 60 cm x 3.15 mm d. 60 cm x 60 cm x 6.3mm

10. The plate electrode of GI or steel used copper used for earthing should be with minimum size of

a. 50 cm x 50 cm x 3.15 mm b. 50 cm x 50 cm x 6.3.mm
c. 60 cm x 60 cm x 3.15 mm d. 60 cm x 60 cm x 6.3mm

11. In pipe earthing, the minimum internal diameter for GI pipe should be

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

a. 30 mm b. 40 mm c. 50 mm d. 60 mm

13.Copper strip electrodes used for earthing should not be less than

a. 22.5 mm x 1.60 mm b. 20 mm x 2.5 mm c. 25 mm x 160 mm

d. 25 mm x 2.5 mm

14. GI or strip electrodes used for earthing should not be less than

a. 25 mm x 4 mm b. 20 mm x 3 mm c. 25 mm x 3 mm d. 20 mm x 4 mm

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

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

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

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

a. 3 months b. 6 months c. 9 months d. 12 months

Batteries

1. The normal SPG of electrolyte of lead acid battery should be

a. 1.160 b. 1.180 c. 1.220 d. 1.240

2. The terminal voltage of a fully charged lead acid cell is

a. 1.8V b. 2.0 V c. 2.2 V d. 2.4 V

3. The terminal voltage of a lead acid cell should not fall below.

a.1.6 b. 1.8V c. 2.0 V d. 2.2 V

4. The normal charging rate of 120 AH lead acid battery set is

a. 4 A b. 8 A c. 12 A d. 16 A

5. The ratio of distil water and acid used to prepare new electrolyte for lead acid cell is

a. 1:1 b. 2:1 c. 3:1 d. 4:1

6. Following law is applicable in the working of lead acid cell

a. Faradays law of self induction
b. Faradays law of mutual induction
c. Faradays law of electrolysis
d. Newton's law of motion.

7. The capacity of storage battery is expressed as

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

8. Sedimentation in lead acid cell occurs due to

a. Overcharging at high rate
b. Slow charging at low rate
c. Over discharge at low rate
d. Non – utilization for long periods.

9. Even when not in use, a lead acid battery should be recharged once in

a. Six Week b. Six days c. Three months d. Six months

Transformers

1. The BDV of transformer oil should be

a. 20 kV b. 30 kV c. 40 kV d. 50 kV

2. The colour of moisten silica gel is

a. Pink b. Blue c. Yellow d. Green

3. The material filled in breather of transformer is

a. Silica gel b. Sulphuric acid c. SF6 d. Mineral oil

4. The protective device to indicate the internal fault in a transformer is

a. Thermal relay b. Bucholz relay c. OVR d. EFR

5. The minimum allowable BDV for transformer oil should stand for

a. 15 Sec. B. 30 Sec. C. 45 Sec. d. 60Sec

6. While testing transformer oil the gap between electrodes is kept at a distance of

a. 1 mm b. 2 mm c. 3 mm d. 4 mm

7. Core of a transformer is made up of

a. Aluminium b. Carbon c. Lead d. Silicon steel

8. Which of the following is not the function of transformer oil ?

a. Cooling of primary coils b. Cooling of secondary
c. Providing additional d. providing inductive coupling

9. For a transformer, the condition for maximum efficiency is

a. Hysterisis loss = eddy current loss b. Core loss = hysteresis loss
c. Copper loss = Iron loss c. Providing inductive coupling

10. Transformer oil shall be free from

a. Odour b. Gases c. Temperature d. Moisture

11. The power factor in a transformer

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. Copper loss at full load b. Copper loss at half load
c. Iron loss at any load c. Sum of iron loss and copper loss.

13.The open circuit test of transformer determines

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

a. Crude oil b. Organic oil c. Mineral oil d. Animal oil

15. A step up transformer increases

a. Power b. Current c. Voltage d. Frequency

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

a. Routine test b. Type test c. Special test d. All above

17. The colour of fresh dielectric oil for a transformer

a. Pale yellow b. Dark brown c. White to grey d. Coluorless

18. The ratio of kW to kVA is known as

a. Voltage regulation b. Power factor c. Transformation ratio d. None above

19. Core lifting of a transformer is done after a period of

a. 3 years b. 4 years c. 5 years d. 6 years

20. The purpose of conservator tank is a transformer is to

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

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

a. 0.25 m b. 0.5 m c. 0.75 m d. 1 m

23. At an atmospheric temperature of 45 deg C and keeping in view the working condition the winding temperature of the transformer should no exceed.

a. 80 deg C b. 95 deg C c. 110 deg C d. 130 deg C.

Relays

1. The testing of relays should be performed at a interval of

a. 6 months b. 12 months c. 18 months d. 24 months

2. If any live conductor in the circuit is entangled with tree branch ----- operates.

a. EFR b. OVR c. OLR d. Thermal relay

3 -------- relay operates if there is a heavy increase in load current

a. EFR b. OVR c. OLR d. Thermal relay

4. ------- relay indicates the temperature rise of a transformer

a. EFR b. OVR c. OLR d. Thermal relay

5. If the relay setting of 60/5 CT is at 3.75, then the tripping will be at

a. 60 Amp b. 45 Amp c. 30 Amp

Lighting & Illumination

1. The illumination level at A class stations should be

a. 20 Lux b. 30 Lux. c. 40 Lux d. 50 Lux

2. The illumination level at B class stations should be

a. 20 Lux b. 30 Lux. c. 40 Lux d. 50 Lux

3. The illumination level at C class stations should be

a. 20 Lux b. 30 Lux. c. 40 Lux d. 50 Lux

4. Recommended no. of light points in type I(DR) quarter is

a. 5 b. 6 c. 7 d. 8

5. Recommended no. of light points in type II quarter is

a. 5 b. 6 c. 7 d. 8

6. Recommended no. of light points in type III quarter is

a. 5 b. 6 c. 7 d. 8

7. Recommended no. of light points in type IV quarter is

a. 8 b. 9 c. 10 d. 11

8. Recommended no. of light points in type IV Spl. quarter is

a. 11 b. 12 c. 13 d. 14

9. Recommended no. of fan points in type I quarter is

a. 2 b. 3 c. 4 d. 5

10. Recommended no. of fan points in type II quarter is

a. 2 b. 3 c. 4 d. 5

11. Recommended no. of fan points in type III quarter is

a. 2 b. 3 c. 4 d. 5

12. Recommended no. of fan points in type IV quarter is

a. 2 b. 3 c. 4 d. 5

13. Recommended no. of fan points in type IV Spl. quarter is

a. 2 b. 3 c. 4 d. 5

14. Recommended connected load for type I (DR) quarter is

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

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

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

a. 1.36 kW b. 3.48 kW c. 4.17 kW d. 6.85 kW

18. Recommended connected load for type IV quarter is

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

a. 4.17 kW b. 6.85 kW c. 8.6 kW d. 11.85 kW

Track Crossings

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

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 66kV to 132 kV overhead lines crossing the railway track should be

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. 1 m b. 1.5 m c. 2 m d.2.5 m

4. The Electrical Inspector at zonal railway is

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

5. The regulations for electrical line crossing on railway track is not applicable to

a. Crossing of railway track laid underground / inside tube and tunnels
b. 1500V DC traction system
c. 25kV, 50 Hz traction system
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. Electrical Inspector b. Asst. Electrical Inspector c. DRM d. ADRM

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

a. British standard specification
b. US standard specification
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

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)

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, with in – hrs of the first report.

a. 12 b. 24 c. 36 d. 48

11. Angle of overhead electrical line crossing to railway track shall be

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

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

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

a. 100 m b. 200 m c. 300 m d. 400 m

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

a. 14.1 m b. 14.6 m c. 15.4 m d. 17.9 m

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

a. 14.1 m b. 14.6 m c. 15.4 m d. 17.9 m

17. In special circumstance 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 33kV lines should be

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 66kV lines should be

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

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

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

a. 2.25 m 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 66kV lines should be

a. 2.25 m b. 2.5 m c. 3.5 m d. 6.0 m

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

a. 9 m b. 10.95 m c. 11.0.5 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

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

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

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

a. 5 ohms b. 8 ohms c. 10 ohms d. 12 ohms

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

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. 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. Temperature data provided b. Name of supervisor
c. Life of crossing d. None of the above

31. The final authority to grant the approval for proposed electrical line crossing on railway track

a. Electrical Inspector b. DRM c. DRM (Elec) d. ADRM

D.G. set

1. If a DG set fails to start, the probable cause may be

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

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

a. Fuel tank empty
b. Governor spring broken
c. Fuel filter dirty
d. All of the above

4. If a DG set misses during operation, the probable cause may be

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. Pump may inject insufficient quantity of fuel
b. Choked fuel injection hole
c. Faulty fuel pump
d. All of the above

6. If a DG set excessive smoke at no load, the probable cause may be

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

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

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. Water mixed with fuel
b. Engine used after a long time
c. Worn out liner piston
c. All of the above

10. If a DG set overheats, the probable cause may be

a. High exhaust back pressure b. Engine overloaded
c. Damaged main or connecting bearing d. All of the above

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

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

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

a. Over loading b. Internal short Circuit c. Both a & b d. None of the above

14. The maximum rated speed for 125kVA Cummins make DG set is

a. 1500 rpm b. 1800rpm c. 2100rpm d. 2500rpm

15. The oil temperature gauge of DG set should normally read between

a. 82-116deg. C b. 90-125 deg. C c. 100-149 deg. C d. 122-148 deg.C

16. During warming up, the load should be applied gradually on a DG set until the oil

a. 40 deg C b. 60 deg C c. 80 deg C d. 100 deg C

17. The water temperature of DG set in operation should normally range between

a. 60-80 deg. C b. 74-91 deg. C c. 88-98 deg. C d. 95-110 deg.C

18. The pH value of the coolant in the radiator of a DG set should be maintained between

a. 6.5 to 8.5 b. 8.5 to 10.5 c. 10.5 to 12. 5 d. 12.5 to 14.5

19. The diesel engine should not be operated if the pH value in the radiator is less than

a. 6.5 b. 8.5 c. 10.5 d. 12.5

20. Primary filters in the fuel system of the DG set should be cleaned at every

a. 150 hrs b. 200 hrs c. 250 hrs d. 300hrs

21. Primary filters in the fuel system of the DG set should be replaced at every

a. 500 hrs b. 800 hrs c. 1000 hrs d. 1500hrs

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

a. 10. psi b. psi c. 15 psi d. 20 psi

23. The exciter in a DG set is

a. Shunt motor b. Compound generator c. Either of a or b d. None of the above.

Pumps

1. If pump delivers no liquid, then probable cause is

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

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

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

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. 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

a. Type of duty required b. Details of head
c. Duration of availability d. The look of pump

7. HS Pump works with suction head.

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

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
a. Above the ground level b. Below the ground level
c. Deep in the bore c. None of the above

10. Line shaft of the VS pump is lubricated

a. Spindle oil b. Diesel oil c. Lub oil SAE – 40/30 d. none of the above

11. Priming is required for

a. HS Pump b. VS pump c. Submersible pump

12. RPM of submersible pump set is

a. 440 b. 1440 c. 380 d. 2800

13. Which pump is most suitable for deep & titled bore

a. HS pump b. VS pump c. Submersible
d. Jet pump e. All of above

14. Redevelopment of bore is done

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
e. All of the above

15. Cap. Of pump set is selected on the ground of

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

a. Less working b. Excessive working c. Incorrect operation d. Failure of pump

17. Pump set motor burns due to

a. Single phasing b. Reverse phasing
c. Overloading for a shorter period d. Non of above.

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

a. DOL b. Start Delta c. Auto Transformer d. None of the above

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

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

a. Voltage b. Frequency c. Power factor d. Current

21. No. of contractors provided in star – delta starter

a. 1 b. 2 c. 3 d. 4

22. Pump Guard functions to protect the submersible pump set against

a. Single phase b. Reverse Phasing
c. Over loading d. Dry running e. All of above.

23. Automation of pump set done to

a. To limit the working of pumps b. To avoid the working 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

a. Operation of pump from individual pump houses
b. Operation of all pumps from a single location
c. None of the above

Coaching

1. Humidity range recommended from comfort air conditioning is

a. 30-50% b. 40-60% c. 50-70% d. 60-80%

2. The rating of compressor motor for Accel make compressor in conventional BG Ist AC coach is

a. 8.5 hp b. 10 hp c. 12 hp d.12.5 hp

3. The rating of condenser motor in conventional BG AC coach is

a. 0.5 kW b. 0.75 kW c. 1 kW d. 1.5 kW

4. The rating of blower motor in conventional BG AC coach is

a. 0.5 kW b. 0.75 kW c. 1 kW d. 1.5 kW

5. The rating of alternator used in conventional BG AC coach is

a. 12kW b. 12.5kW c. 18kW d. 25kW

6. The rating of alternator used in RMPU BG AC coach is

a. 12kW b. 12.5kW c. 18kW d. 25kW

7. The rated current of 18kW alternator is

a. 130 A b. 132.5 A c. 136 A d. 138.5 A

8. The rated voltage of 18kW alternator

a. 130 A b. 132.5 A c. 136 A d. 138.5 A

9. The cut in speed of 25kW alternator is

a. 400rpm b. 600rpm c. 800rpm d. 1000 rpm

10. The minimum sped required for full output from a 18kW alternator is

a. 400rpm b. 600rpm c. 800rpm d. 1000 rpm

11. The rated range of DC input supply to inverter of an AC coach is

a. 70 – 120 V b. 80-130 V c. 90-140 V d. 100 – 150 V

12. The rated out put current of inverter in AC coach is

a. 30 A b. 35 A c. 40 A d. 45 A

13. The rating of main negative fuse in BG TL coach is

a. 35 A b. 63 A c. 16 A d. 100 A

14. The normal running speed of a DG set is

a. 500rpm b. 1000rpm c. 1500rpm d. 2000rpm

15. The low temperature setting of cooling thermostat in conventional BG AC coach is

a. 22 deg. C b. 24 deg. C c. 26 deg. C d. 28 deg. C

16. The medium temperature setting of cooling thermostat in conventional BG AC coach in

a. 22 deg. C b. 24 deg. C c. 26 deg. C d. 28 deg. C

17. The High temperature setting of cooling thermostat in conventional BG AC coach in

a. 22 deg. C b. 24 deg. C c. 26 deg. C d. 28 deg. C

18. The low temperature setting of heating thermostat in conventional BG AC coach in

a. 17 deg. C b. 19 deg. C c. 21 deg. C d. 23 deg. C

19. The medium temperature setting of heating thermostat in conventional BG AC coach in

a. 17 deg. C b. 19 deg. C c. 21 deg. C d. 23 deg. C

20. The high temperature setting of heating thermostat in conventional BG AC coach in

a. 17 deg. C b. 19 deg. C c. 21 deg. C d. 23 deg. C

21. The pressure setting of OP cut out in conventional BG AC coach is

a. 2.5kg/sq cm b. 0.7 kg/ sq cm c. 17.6 kg / sq cm d. 18.2 kg/ sq cm

22. The pressure setting of LP cut out in conventional BG AC coach is

a. 2.5kg/sq cm b. 0.7 kg/ sq cm c. 17.6 kg / sq cm d. 18.2 kg/ sq cm

23. The pressure setting of HP cut out in conventional BG AC coach is

a. 2.5kg/sq cm b. 0.7 kg/ sq cm c. 17.6 kg / sq cm d. 18.2 kg/ sq cm

24. The rating of HRC fuse for battery set (single box) in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

25. The rating of HRC fuse for battery set (double box) in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

26. The rating of HRC fuse for light circuit in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

27. The rating of HRC fuse for Fan circuit in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

28. The rating of HRC fuse for passing circuit (EFT) in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

29. The rating of HRC fuse for main negative in 24 V MG TL coach is

a. 120 A b. 100 A c. 35 A d. 63 A

30. The size of rewirable fuse for battery set (single box) in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

31. The size of rewirable fuse for battery set (double box) in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

32. The size of rewirable fuse for light circuit in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

33. The size of rewirable fuse for fan circuit in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

34. The size of rewirable fuse for passing circuit (EFT) in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

35. The size of rewirable fuse for main negative in 24 V MG TL coach is

a. 16 SWG b. 18 SWG c. 22 SWG d. 24 SWG

36. The rating of HRC fuse for battery set in 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

37. The rating of HRC fuse for light circuit in 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

38. The rating of HRC fuse for light circuit in 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

39. The rating of HRC fuse for passing circuit (EFT) in 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

40. The rating of HRC fuse for alternator phase in 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

41. The rating of HRC fuse for field fuse in RRU panel of 110 V BG TL coach is

a. 6 A b. 16 A c. 35 A d. 63 A

42. Level of illumination in First class TL coach (with incandescent lamp) should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

43. Level of illumination in First class TL coach (with FL tube) should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

44. Level of illumination in II class TL coach (with incandescent lamp) should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

45. Level of illumination in II class TL coach (with FL tube) should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

46. Level of illumination in postal van should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

47. Level of illumination in Dining / Pantry car should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

48. Level of illumination in lavatory and corridor of First Class TL coach should be

a. 16 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

49. Level of illumination in lavatory and corridor of II Class TL coach should be
a. 11 Lux b. 30 Lux. c. 40 Lux. d. 60 Lux.

50. Undesirable operation of HP cut out may be due to

a. Condenser fan motor failure b. Gas leakage
c. Thermostat not operating properly d. Compressor motor failing to stop

51. Undesirable operation of LP cut out may be due to

a. Condenser fan motor failure b. Gas leakage
c. Thermostat not operating properly d. Compressor motor failing to stop

52. The refrigerant used in RMPU equipped AC coach is

a. R-22 b. R-12 c. S-22 d. S-12

53. The refrigerant used in conventional AC coach is

a. R-22 b. R-12 c. S-22 d. S-12

54. The refrigerant used in RMPU equipped AC coach is

a. CHCIF 2 b. CHC12F2 c. H2SO4 d. PbSO4

55. The refrigerant used in convention AC coach is

a. CHCIF 2 b. CHC12F2 c. H2SO4 d. PbSO4

56. Quantity of refrigerant charged in one compressor of RMPU equipped AC coach is

a. 3 kg b. 10 kg c. 12 kg d. 15 kg

57. Quantity of refrigerant charged in one compressor conventional AC coach is

a. 3 kg b. 10 kg c. 12 kg d. 15 kg

58. If the compressor refuses to start in the AC system, the probable cause is

a. HP cut out open b. Coupling loose
c. Too much oil circulated causing hammer d. Insufficient refrigerant in the system.

59. If the compressor refuses to start in the AC system, the probable cause is

a. HP cut out open b. Coupling loose
c. Too much oil circulated causing hammer d. Insufficient refrigerant in the system.

60. If the compressor is giving noise in the AC system, the probable cause is

a. HP cut out open b. Coupling loose
c. Too much oil circulated causing hammer d. Insufficient refrigerant in the system.

61. If there is low discharge pressure in the AC system, the probable cause is

a. HP cut out open b. Coupling loose
c. Too much oil circulated causing hammer d. Insufficient refrigerant in the system.

62. . If there is high discharge pressure in the AC system, the probable cause is

a. HP cut out open b. Coupling loose
c. Too much oil circulated causing hammer d. Too much refrigerant in the system.

63. . If there is high suction pressure in the AC system, the probable cause is

a. Insufficient refrigerant in the system. b. Too much liquid fed through expansion value
c. Expansion valve blocked. d. Capacity control not adjusted

64. . If there is low suction pressure in the AC system, the probable cause is

a. Insufficient refrigerant in the system. b. Too much liquid fed through expansion value
c. Expansion valve blocked. d. Capacity control not adjusted

65. If the compressor is not unloading in the AC system, the probable cause is

a. Insufficient refrigerant in the system. b. Too much liquid fed through expansion value
c. Expansion valve blocked. d. Capacity control not adjusted

66. . If the compressor is not loading in the AC system, the probable cause is

a. Insufficient refrigerant in the system. b. Too much liquid fed through expansion value
c. Expansion valve blocked. d. Capacity control not adjusted

67. If there is low oil pressure in the AC system, the probable cause is

a. Compressor not rotating in correct direction b. Piston rings leaking
c. System overcharged with refrigerant d. Starter defective.

68. If is loosing oil in the AC system, the probable cause is

a. Compressor not rotating in correct direction b. Piston rings leaking
c. System overcharged with refrigerant d. Starter defective.

69. If compressor is starting and stopping too often in the AC system, the probable cause is

a. Compressor not rotating in correct direction b. Piston rings leaking
c. System overcharged with refrigerant d. Starter defective.

70. If compressor motor is starting and stopping too often in the AC system, the probable cause is

a. Compressor not rotating in correct direction b. Piston rings leaking
c. System overcharged with refrigerant d. Starter defective.

71. The vapour compression system of air conditioning works on the principle of

a. Latent heat b. Expansion c. a & b both d. None above.

72. The weight to be applied to check the VEE belt (Fenner make) tension is

a. 2.1kg b. 4.1 kg c. 7 kg d. 10 kg

73. The weight to be applied to check the VEE belt (Hilton make) tension is

a. 2.1kg b. 4.1 kg c. 7 kg d. 10 kg

74. Recommended sag for Fenner make VEE belt on applying weight of 4.1 kg is

a. 14mm b. 16mm c. 21mm d. 23mm

75. Recommended sag for Hilton make VEE belt on applying weight of 4.1 kg is

a. 14mm b. 16mm c. 21mm d. 23mm

76. Axel pully position from wheel hub for ICF make coach should be

a. 140mm b. 150mm c. 160mm d. 170mm

77. The gap between two part of axel pulley (after tightening) should not be less than

a. 1mm b. 2 mm c. 3 mm d. 4mm

78. The diode used as freewheeling diode in RRU panel of KEL make is

a. BY127 b. BY740 c. AX127 d. AX740

79. In the RRU panel of coach the voltage detection is one by

a. Tunnel diode b. Varactor diode c. Zener diode d. Any above

80. A resistor having 1^{st} , 2^{nd} and 3^{rd} colour band as brown, grey and orange respectively, its value is

a. 10 K ohm b. 18 K ohm c. 22 K ohm d. 30 K ohm

81. The transistor incorporated in the RRU panel of coach is

a. BJT b. FET c. MOSFET d. IGBT

82. The cut off pressure setting of WRA in AC coach is

a. 2 psi b. 5 psi c. 8 psi d. 10 psi

83. The cut in pressure setting of WRA in AC coach is

a. 2 psi b. 5 psi c. 8 psi d. 10 psi

84. The water in the tank of WRA is lifted by

a. Air pressure b. Vaccum c. Suction d. None of the above

85. Which of the following is not a desirable property of refrigerant

a. It should be non-toxic b. It should be inflammable
c. It should be not corrosive d. It should be non-irritating

86. The time delay setting of TDR for operation of contractors in conventional BG AC coach is

a. 1 sec b. 1.5 sec c. 2 sec d. 2.5 sec

87. The cut in speed for 4.5 kW KEL make alternator is

a. 100rpm b. 200 rpm c. 300 rpm d. 400 rpm

88. The minimum speed for full output for 4.5 kW KEL make alternator is

a. 100rpm b. 200 rpm c. 550 rpm d. 2450 rpm

89. The maximum speed for 4.5 kW KEL make alternator is

a. 100rpm b. 200 rpm c. 550 rpm d. 2450 rpm

90. The rated voltage range for 4.5 kW KEL make alternator is

a. 90-100V b. 120-124V c. 128-134V d. 130V

91. The bearing used on “drive end “ of 4.5 kW KEL make alternator is

a. NU 311 b. BY 127 c. 6309 d. None above

92. The bearing used on “non-drive end ” of 4.5kW KEL make alternator is

a. NU 311 b. BY 127 c. 6309 d. None above

93. The cut in speed for 25 kW KEL make alternator is

a. 100rpm b. 2500 rpm c. 400 rpm d. 800 rpm

94. The minimum speed for full output of 25 kW KEL make alternator is

a. 100rpm b. 2500 rpm c. 400 rpm d. 800 rpm

95. The maximum permissible speed for 25kW KEL make alternator is

a. 100rpm b. 2500 rpm c. 400 rpm d. 800 rpm

96. The rated full load voltage of 25kW KEL make alternator is

a. 130 V b. 140 V c. 150 V d. 193 V

97. The rated full load current of 25kW KEL make alternator is

a. 130 V b. 140 V c. 150 V d. 193 V

98. The PIV of power diode in RRU panel of SIL make 4.5 kW alternator is

a. 12 V b. 500 V c. 1000 V d. 1500 V

99. The PIV of zener diode in RRU panel of SIL make 4.5 kW alternator is

a. 12 V b. 500 V c. 1000 V d. 1500 V

100. The value of insulation resistance in AC coach, between stator winding of alternator and earth should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

101. The value of insulation resistance in AC coach, between field winding of alternator and earth should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

102. The value of insulation resistance in AC coach, between field winding and stator of alternator should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

103. The value of insulation resistance in TL coach, between stator winding of alternator and earth should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

104. The value of insulation resistance in TL coach, between field winding and stator of alternator should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

105. The value of insulation resistance in AC coach, between field winding and stator of alternator should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

106. The value of insulation resistance in AC coach, between live parts regulator and earth should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

107. The value of insulation resistance in TL coach, between live parts regulator and earth should be above

a. 1 M ohm b. 5 M ohm c. 10 M ohm d. 20 M ohm

108. In the temperature rise test of RRU panel of AC coach, the temperature of power diode should not exceed (at ambient temperature 50 deg. C)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

109. In the temperature rise test of alternator of AC coach, the temperature of terminals should not exceed (at ambient temperature 55 deg. C)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

110. In the temperature rise test of alternator of AC coach, the temperature of bearings should not exceed (at ambient temperature 50 deg. C)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

111. In the temperature rise test of alternator of AC coach, the temperature of stator and field winding should not exceed (at load of 193 A)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

112. In the temperature rise test of RRU panel of TL coach, the temperature of power diode should not exceed (at ambient temperature 50 deg. C)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

113. In the temperature rise test of alternator of TL coach, the temperature of terminal should not exceed (at ambient temperature 50 deg. C)

a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

114. In the temperature rise test of alternator of TL coach, the temperature of bearing should not exceed (at ambient temperature 50 deg. C)
a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C
115. In the temperature rise test of alternator of TL coach, the temperature of stator and field winding should not exceed
a. 35 deg C b. 90 deg. C c. 100 deg C d. 110 deg C

Electrical Units : Equivalents & Formulae

1. One HP =

a. 756 watts b. 746 watts c. 860 watts d. 856 watts

2. Torque in ft. lbs =

a. HP x 33000 / (RPM x 2) b. HP x 2 / (RPM x 33000)
c. HP x RPM / (2 x 33000) d. HP x 2 / (HP x 33000)

3. Current =

a. Watts/Volts b. Volts/Watts c. Kilowatt/Volts d. Kilovolt/watt

4. Motor output in HP =

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

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. 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

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

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) c. HP x 746 x volts/ (Efficiency x pf)

9. One Kilowatt =
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) c. HP x 746 x volts/ (Efficiency x pf)

10. One Kilowatt =
a. 1.314 HP b. 13.14 HP c. 131.4 HP d. 1314 HP

11. One kilowatt =

a. 1360 Metric HP b. 136 Metric HP c. 13.60 Metric HP 4. 1.360 Metric HP

12. One Kwh =

a. 34.13 BTU b. 44.13 c. 3.413 BTU d. 4.413 BTU

13. One kWH

a. 1000 Calories b. 2.520 Calories c. 25.20 Calories d. 252.0 Calories

14. One BTU

a. 0.2520 Calories b. 2.520 Calories c. 25.20 Calories d.252.0 Calories

15. One Calorie

a. 39.68 BTU b. 4.968 BTU c. 49.68 BTU d. 3.968 BTU

16. One foot pound =

a. 0.1383 M kg b. 1.383 M kg c. 13.83 M kg d. 138.3 M kg

17. One BTU

a. 0.1076 M kg b. 1.076 M kg c. 10.76 M kg d. 107.6 M kg

18. One kilowatt =

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. 1 kWH b. 1 kW c. 1 kVA d. Watt

20. Power factor =

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.

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 cableof size 70 sq mm (laid in duct) is approximately.

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 cableof size 50 sq mm (laid in air) is approximately.

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 cableof size 35 sq mm (laid direct in ground) is approximately.

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 cableof size 25 sq mm (laid direct in ground) is approximately.

a. 55 amps b. 76 amps c. 90 amps d. 150 amps