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1. The condition for the validity of ohm's law is that the
   (a) Temperature should remains constant
   (b) Current should be proportional to voltage
   (c) Resistance must be wire wound type
   (d) All of the above
   Ans-d

2. Twelve 1 Ω resistances are used as edges to form a cube. The resistance between two diagonally opposite corners of the cube is
   (a) 5/6Ω (b) 1Ω
   (c) 6/5Ω (d) 3/2Ω
Ans-a

3. Ideal voltage source have
   (a) Zero internal resistance
   (b) Infinite internal resistance
   (c) Low value of current
   (d) Large value of emf.
   Ans-a
4. Ideal current source have
   (a) Zero internal resistance
   (b) Infinite internal resistance
   (c) Low value of voltage
   (d) Large value of current
   Ans-b

5. For a network of 11 branches and 6 nodes, what is the number of independent loops
   (a) 4 (b) 5 (c) 6
   (d) 11
   Ans-c
6. If an atom looses one or more electrons it becomes
   (a) electrically neutral
   (b) electrically positive
   (c) electrically
   (d) a neutral ion
   ans-b
7. The space surrounding a charge body, within which the influence of its charge extends is called
   (a) coulombs
   (b) electric field
   (c) electric intensity
   (d) lines of force
   ans-b
8. The unit of electric energy is
   (a) Watt
   (b) joule-second
   (c) KWh
   (d) Volt-Ampere
   Ans-c
9. Permittivity is expressed in terms of
   (a) N/m
   (b) Webers/m

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(c) Farad/meter
(d) Farad/sq.m.

Ans-c

10. The S.I. unit of power is
(a) Henry (b) coulomb
(c) watt (d) watt-hour

Ans-c

11. The substances which have a large number of free electrons and offer a low resistance are called
(a) insulators (b) inductors
(c) semi-conductors (d) conductors

Ans-d

12. Electric current passing through the coil produces
(a) magnetic effect
(b) luminous effect
(c) thermal effect
(d) chemical effect

Ans-a

13. Bulbs in street lighting are all connected in
(a) parallel (b) series
(c) series-parallel (d) end-to-end

Ans-a

14. Temperature co-efficient of resistance is expressed in terms of
(a) ohms/°C
(b) mho/ohm °C
(c) /°C
(d) mhos/°C

Ans-c

15. The resistance of a conductor varies inversely as
(a) length
(b) area of cross-section
(c) temperature
(d) resistivity

Ans-b

16. Which of the following materials has a negative temperature co-efficient of resistance?
(a) Copper (b) Aluminum
(c) Carbon (d) Brass

Ans-c

17. Which is the best conductor of electricity?
(a) Iron (b) Silver
(c) Copper (d) Carbon

Ans-b

18. The rating of a fuse wire is always expressed in
(a) ampere-hours (b) ampere-volts
(c) kWh (d) amperes

Ans-d

19. A closed switch has a resistance of
(a) zero
(b) about 50 ohms
(c) about 500 ohms
(d) infinity

Ans-a

20. The ratio of mass of proton to that of electron is nearly
(a) 1840 (b) $\frac{1}{1840}$
(c) 30 (d) 4

Ans-a

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21. What will be the capacity of four capacitors of equal capacity 'C', when connected in series

(a) 4C (b) C/4
(c) C (d) 3/4C

Ans-b

22. A bank of condenser across the load of the factory is used.

(a) for improving the power factor
(b) for reducing the power factor
(c) for improving the fluctuations
(d) for quick starting of the motors

ans-a

23. The electric flux and field intensity inside a conducting sphere is

(a) zero (b) maximum
(c) uniform (d) minimum

Ans-a

24. Dielectric strength of air is nearly

(a) 30 kV/cm (max)
(b) 30 kV/mm
(c) 300 kV/mm
(d) 3000kV/mm

Ans-a

25. The potential inside a charged hollow sphere is

(a) zero
(b) same as that on the surface
(c) less than that on the surface
(d) None of these

Ans-b

26. The capacity of capacitor used in power factor correction is expressed in terms of

(a) kVA (b) kW
(c) volts (d) kVAR

Ans-d

27. Which of the following expression is correct for electric field strength ?

(a) $E = D/\varepsilon$
(b) $E = D^2/t$
(c) $E = jtD$
(d) $E= nD^2$

Ans-a

28. The absolute permittivity of free space is given by

(a) 8.857×10^{-9} F/m
(b) 8.857×10^{-10} F/m
(c) 8.857×10^{-11} F/m
(d) 8.854×10^{-12} F/m

Ans-d

29. The relative permittivity has the following units

(a) F/m
(b) m/F
(c) Wb/m
(d) no units

ans-d

30. The unit of electric field intensity is

(a) N/C^2
(b) Wb/m^2
(c) N/C

(d) N^2/C

Ans-c

31. One kilo-watt-hour is equal to

(a) 4180 kilo calories
(b) 829 kilo calories
(c) 860 kilo calories
(d) 4200 kilo calories

Ans-c

32. The direction of the induced current depends upon.

(a) the length of the conductor
(b) the speed of the movement of the conductor
(c) the strength of the magnetic field
(d) the direction of the magnetic field

ans-d

33. The sign ⊗ in a plan view of a conductor means

(a) the current flows into the drawing area
(b) the current flows out of the drawing area
(c) there is a positive current in the conductor
(d) we cannot apply the cork screw rule

ans-a

34. The aim of shielding an instrument is

(a) to prevent its damage due to moisture
(b) to reduce the effect of stray magnetic fields on its reading
(c) to increase the range of the instruments
(d) none of these

ans-b

35. The magnitude of e.m.f. induced in a wire does not depend on

(a) length of wire
(b) speed of wire
(c) diameter of wire
(d) none of these

ans-c

36. An e.m.f. of 8 V is induced in a coil of inductance 4H. The rate of change of current must be

(a) 32 A/s (b) 0.5 A/s
(c) 2A/sec (d) None of these

Ans-c

37. Air gap has _____ reluctance as compared to iron or steel path

(a) little (b) lower
(c) higher (d) zero

Ans-c

38. The unit of relative permeability is

(a) henry/metre (b) henry
(c) henry/sq. m (d) it is dimensionless

Ans-d

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39. One Telsa is equal to
(a) 1 Wb/mm^2
(b) 1 Wb/m
(c) 1 Wb/m^2
(d) 1 mWb/m^2
Ans-c

40. Permeability in a magnetic circuit corresponds to_____ in an electric circuit.
(a) resistance
(b) resistivity
(c) conductivity
(d) conductance
Ans-c

41. The unit of retentivity is
(a) Weber
(b) Weber/sq. m
(c) Ampere turn/mete
(d) Ampere turn
Ans-b

42. The unit of flux is the same as that of
(a) Reluctance
(b) Resistance
(c) Permeance
(d) pole strength
Ans-d

43. The Biot-savart's law is a general modification of
(a) Kirchhoffs law
(b) Lenz's law
(c) Ampere's law
(d) Faraday's laws
Ans-c

44. Which form of energy can be easily converted into other forms of energy
(a) Mechanical Energy
(b) Electrical Energy
(c) Chemical Energy
(d) Heat Energy
Ans-b

45. Charging of battery is done by
(a) A.C. (b) D.C.
(c) A.C. or D.C. (d) None of these
Ans-b

46. A.C.
(a) Changes it's direction periodically
(b) Always flows in the same direction
(c) Changes it's magnitude as well direction periodically
(d) Has no change in magnitude or direction
Ans-c

47. The value of Power factor when phase difference between voltage and current is 0°
(a) Unity (b) Lagging
(c) Leading (d) None of these
Ans-a

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48. If the area cross-section area of a conductor is doubled, its resistance (R) becomes

(a) $2R$ (b) $\frac{R}{2}$

(c) $\frac{2}{R}$ (d) $\frac{3}{2}R$

Ans-b

50. If specific resistance of a material is more, its resistance will be

(a) More
(b) Average
(c) Less
(d) None of these

Ans-a

51. The energy meter measures the energy in

(a) Watts
(b) Kilo-watts
(c) Kilo-Watt-hour
(d) Mega watts

Ans-c

52. KVA is the unit of

(a) Actual-Power
(b) Apparent Power
(c) Reactive Power
(d) None of these

Ans-b

53. If 1 A current flows in a wire of 2.5Ω resistance, the power lost in form of heat is

(a) 2.5 watts
(b) 5 watts
(c) 1 watt
(d) 0.4 watt

Ans-a

54. The moving part in an energy meter is

(a) Magnet
(b) Colls
(c) Terminals
(d) Aluminium disc

Ans-d

55. Lights and ceiling fans are controlled by switches of

(a) 2 A (b) 5 A (c) 15 A
(d) 25 A

Ans-b

56. The supply to various sub-circuits is given from

(a) Main switch
(b) Distribution board
(c) Service line
(d) Energy meter

Ans-b

57. A device used for making and breaking the electrical circuit is

(a) Fuse (b) Plug
(c) Junction box (d) Switch

Ans-d

58. Which wiring system is most suitable for temporary wiring

(a) Wooden casing and capping wiring
(b) Lead sheathed wiring
(c) Cleat wiring
(d) Conduit wiring

Ans-c

59. Casing and capping wiring is commonly used for
(a) Residential and office buildings
(b) Outdoor wiring
(c) Damp conditions
(d) Sunny conditions

Ans-a

60. Which of following is kept in mind. While making a choice of wiring system for a building
(a) Type of wire
(b) Nature of load
(c) Material Used
(d) All of these

d

61. Industrial wiring requires
(a) 2-phase, 3-wire supply
(b) 3-phase, 3-wire supply
(c) 3-phase, 4-wire supply
(d) None of these

Ans-b

62. A switch is provided on
(a) Phase wire
(b) Neutral wire
(c) Earth wire
(d) None of these wires

Ans-a

63. Five resistances of 1.0Ω each are available. The minimum resistance by combining all these will be
(a) 1Ω (b) 5Ω
(c) $\frac{1}{10}\Omega$ (d) $\frac{1}{5}\Omega$

Ans-d

64. Three resistance each of R Ω are connected to form a triangle. The resistance between any two terminals will be
(a) RΩ (b) $\frac{3}{2}$RΩ
(c) 3RΩ (d) $\frac{2}{3}$RΩ

Ans-d

65. Three capacitors of values $2\,\mu F$, $4\,\mu F$ and $4\,\mu F$ are connected in parallel, the capacitance of the combination is
(a) $8\,\mu F$ (b) $10\,\mu F$
(c) $1\,\mu F$ (d) None of these

Ans-b

66. The phase displacement between various phases of a 3-phase system is equal to,
(a) 90° (b) 180°
(c) 120° (d) 360°

Ans-c

67. In a balanced 3-phase delta connected system, the relationship between the rms values of line currents and the phase current is given by,

(a) $I_L = I_{ph}$ (b) $I_L = \sqrt{3} I_{ph}$

(c) $I_{ph} = \sqrt{3} I_L$ (d) $I_L = \sqrt{2} I_{ph}$

Ans-b

68. The apparent power and active power drawn are equal for an ac circuit of,

(a) inductive type

(b) capacitive type

(c) resistive type

(d) none of these

Ans-c

69. Capacitive reactance of the above circuit is expressed as,

(a) $X_c = \omega c$ (b) $X_c = \frac{1}{\omega c}$

(c) $X_c = \frac{\omega}{c}$ (d) $X_c = \frac{c}{\omega}$

Ans-b

70. The power factor of a purely inductive circuit is,

(a) lagging (b) leading

(c) zero lagging (d) unity

Ans-c

71. The power factor of a pure capacitive circuit is always

(a) lagging (b) leading

(c) unity (d) zero leading

Ans-d

72. A cycle of ac wave can be represented by,

(a) π radians (b) 2π radians

(c) 180° (d) none of these

Ans-b

73. The rms value of voltage for ac sine wave in terms of its maximum value, E_{max} is,

(a) $\frac{E_{\max}}{\pi}$ (b) $0.637\, E_{\max}$

(c) $0.707\, E_{\max}$ (d) $0.5 E_{\max}$

Ans-c

74. Two current wave shapes are represented by, $i_1 = I_{\max 1} \sin(\omega t)$; $i_2 = I_{\max 2} \sin(\omega t + 30^o)$; . The current wave i_1 is,

(a) lagging the current i_2 wave by 30^o

(b) leading the current i_2 wave by 30^o

(c) in phase with current wave i_2

(d) none of these

ans-a

75. The maximum transmission voltage used in India is:

(a) 66 KV (b) 132 KV

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(c) 220 KV (d) 765 KV

Ans-d

76.Which of following is not a component of a transmission line?

(a) Supports (b) Generator

(c) Conductor (d) Insulator

Ans-b