

1. The clouds float in the atmosphere because of their low
(A) temperature (B) velocity (C) pressure (D) density
2. Sound cannot travel through
(A) solids (B) liquids (C) gases (D) vacuum
3. Noise and music differ in their
(A) quality (B) tone (C) note (D) pitch
4. If a body is charged by rubbing it, its weight
(A) remains precisely constant (B) increases slightly
(C) decreases slightly (D) may increase slightly or may decrease slightly
5. At the time of short circuit, the current in the circuit
(A) vary continuously (B) increases heavily
(C) decreases substantially (D) does not change
6. A vibrating body
(A) will always produce sound
(B) may or may not produce sound if the amplitude of vibration is low
(C) will produce a sound which depends upon the frequency
(D) None of these
7. The special technique used in ships to calculate the depth of ocean beds is
(A) LASER (B) SONAR (C) sonic boom (D) reverberation
8. When the distance between the object and the plane mirror increases
(A) the image will be changed
(B) the size of the image will become less than the size of the object
(C) the distance between the image and the plane mirror increases
(D) the distance between the image and the plane mirror decreases
9. The sound waves that are below 20Hz are known as
(A) Infrasonic sounds (B) Ultrasonic sounds
(C) Noise (D) Tone
10. When a ship floats on water
(A) it displaces no water
(B) the mass of water displaced is equal to the mass of the ship
(C) the mass of water displaced is lesser than the mass of the ship
(D) the mass of water displaced is greater than the mass of the ship
11. Density of any substance is inversely proportional to its
(A) Mass (B) Weight (C) Specific gravity (D) Volume
12. The value of 'g' (acceleration due to gravity) is maximum at
(A) Equator (B) Tropic of Cancer (C) Poles (D) Capricorn
13. I.C. chips for computers are usually made of-
(A) Leaf (B) Chromium (C) Silicon (D) Gold

14. Boiling point of water decreases when atmospheric pressure
(A) Decreases (B) Increases (C) Have No Effect (D) None
15. In a D.C. shunt motor, speed is
(A) independent of armature current
(B) directly proportional to the armature current
(C) proportional to the square of the current
(D) inversely proportional to the armature current
16. The type of D.C. motor used for shears and punches is
(A) shunt motor (B) series motor
(C) differential compound D.C. motor (D) cumulative compound D.C. motor
17. If a D.C. motor is connected across the A.C. supply it will
(A) run at normal speed (B) not run
(C) run at lower speed (D) burn due to heat produced in the field winding by eddy currents
18. In a D.C. shunt motor, under the conditions of maximum power, the current in the armature will be
(A) almost negligible
(B) rated full-load current
(C) less than full-load current
(D) more than full-load current
19. Differentially compound D.C. motors can find applications requiring
(A) high starting torque
(B) low starting torque
(C) variable speed
(D) frequent on-off cycles
20. The speed of a D.C. shunt motor more than its full-load speed can be obtained by
(A) decreasing the field current
(B) increasing the field current
(C) decreasing the armature current
(D) increasing the armature current
21. A direct on line starter is used: for starting motors
(A) up to 5 H.P.
(B) up to 10 H.P.
(C) up to 15 H.P.
(D) up to 20 H.P.
22. By looking at which part of the motor, it can be easily confirmed that a particular motor is D.C. motor?
(A) Frame
(B) Shaft
(C) Commutator
(D) Yoke

- 23 .According to Fleming's left-hand rule, when the forefinger points in the direction of the field or flux, the middle finger will point in the direction of
- (A) current in the conductor
 - (B) resultant force on conductor
 - (C) none of the above
 - (D) force on the conductor
- 24 .In case of D.C. shunt motors the speed is dependent on back e.m.f. only because
- (A) back e.m.f. is equal to armature drop
 - (B) armature drop is negligible
 - (C) flux is proportional to armature current
 - (D) flux is practically constant in D:C. shunt motors
- 25..A D.C. series motor is that which
- (A) has its field winding consisting of thick wire and less turns
 - (B) has a poor torque
 - (C) can be started easily without load
 - (D) has almost constant speed
- 26 .When two D.C. series motors are connected in parallel, the resultant speed is
- (A) more than the normal speed
 - (B) less than the normal speed
 - (C) normal speed
 - (D) zero
- 27 If a D.C. motor is to be selected for conveyors, which motor would be preferred ?
- (A) Series motor
 - (B) Shunt motor
 - (C) Differentially compound motor
 - (D) Cumulative compound motor
- 28 .Starters are used with D.C. motors because
- (A) these motors have high starting torque
 - (B) these motors are not self-starting
 - (C) back e.m.f. of these motors is zero initially
 - (D) to restrict armature current as there is no back e.m.f. while starting
29. Which D.C. motor will be preferred for machine tools ?
- (A) Series motor
 - (B) Shunt motor
 - (C) Cumulative compound motor
 - (D) Differential compound motor
30. The direction of rotation of a D.C. series motor can be changed by
- (A) interchanging supply terminals
 - (B) interchanging field terminals
 - (C) either of (a) and (b) above
 - (D) None of the above

- 31 .Which of the following application requires high starting torque ?
(A) Lathe machine
(B) Centrifugal pump
(C) Locomotive
(D) Air blower
- 32 For starting a D.C. motor a starter is required because
(A) it limits the speed of the motor
(B) it limits the starting current to a safe value
(C) it starts the motor
(D) none of the above
- 33 .Which D.C. motor is preferred for elevators ?
(A) Shunt motor
(B) Series motor
(C) Differential compound motor
(D) Cumulative compound motor
34. What will happen if the back e.m.f. of a D.C. motor vanishes suddenly?
(A) The motor will stop
(B) The motor will continue to run
(C) The armature may burn
(D) The motor will run noisy
- 35 .In D.C. shunt motors as load is reduced
(A) the speed will increase abruptly
(B) the speed will increase in proportion to reduction in load
(C) the speed will remain almost constant
(D) the speed will reduce
- 36 . The audible range for human ears is
(A) 50 Hz – 50 k Hz
(B) 20 Hz – 20 k Hz
(C) 30 Hz – 30 k Hz
(D) 100 Hz – 100 kHz
- 37 Which of the following does not change in a transformer ?
(A) Current (B) Voltage (C) Frequency (D) All of the above
38. In a transformer the energy is conveyed from primary to secondary
(A) through cooling coil (B) through air (C) by the flux (D) none
39. A transformer core is laminated to
(A) reduce hysteresis loss (B) reduce eddy current losses
(C) reduce copper losses (D) reduce all above losses

40. The no-load current drawn by transformer is usually what per cent of the full-load current ?
- (A) 0.2 to 0.5 % (B) 2 to 5 % (C) 12 to 15 % (d) 20 to 30 %
41. The path of a magnetic flux in a transformer should have
- (A) high resistance (B) high reluctance
(C) low resistance (D) low reluctance
42. No-load on a transformer is carried out to determine
- (A) copper loss (B) magnetising current
(C) magnetising current and loss (D) efficiency of the transformer
- 43 . The dielectric strength of transformer oil is expected to be
- (A) 11 kV (B) 33 kV (C) 100 kV (D) 330 kV
- 44 . Sumpner's test is conducted on trans-formers to determine
- (A) temperature (B) stray losses
(C) all-day efficiency (D) none of these
- 45 The efficiency of a transformer will be maximum when
- (A) copper losses = hysteresis losses (B) hysteresis losses = eddy current losses
(C) eddy current losses = copper losses (D) copper losses = iron losses
46. The purpose of providing an iron core in a transformer is to
- (A) provide support to windings (B) reduce hysteresis loss
(C) decrease the reluctance of the magnetic path (D) reduce eddy current losses
47. Which of the following is not a part of transformer installation ?
- (A) Conservator (B) Breather (C) Buchholz relay (D) Exciter
48. While conducting short-circuit test on a transformer the following side is short circuited
- (A) High voltage side (B) Low voltage side
(C) Primary side (D) Secondary side

49. Which winding in a transformer has more number of turns ?
- (A) Low voltage winding (B) High voltage winding
(C) Primary winding (D) Secondary winding
50. Efficiency of a power transformer is of the order of
- (A) 100 per cent (B) 98 per cent
(C) 50 per cent (D) 25 per cent
51. In a given transformer for given applied voltage, losses which remain constant irrespective of load changes are
- (A) friction and windage losses (B) copper losses
(C) hysteresis and eddy current losses (D) none of these
52. A common method of cooling a power transformer is
- (A) natural air cooling (B) air blast cooling
(C) oil cooling (D) any of the above
53. The no load current in a transformer lags behind the applied voltage by an angle of about
- (A) 180° (B) 120° (C) 90° (D) 75°
54. In a transformer routine efficiency depends upon
- (A) supply frequency (B) load current
(C) power factor of load (D) both (b) and (c)
55. In the transformer the function of a conservator is to
- (A) provide fresh air for cooling the transformer
(B) supply cooling oil to transformer in time of need
(C) protect the transformer from damage when oil expands due to heating
(D) none of the above
56. In star connected system , return current is measured in neutral when load is
- (A) Balanced (B) Unbalanced
(C) Of Low PF (D) None

57. Power transformers are designed to have maximum efficiency at
(A) nearly full load (B) 70% full load (C) 50% full load (D) no load
58. The maximum efficiency of a distribution transformer is
(A) at no load (B) at 50% full load (C) at 80% full load (D) at full load
59. Transformer breaths in when
(A) load on it increases (B) load on it decreases
(C) load remains constant (D) none of the above
60. No-load current of a transformer has
(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
61. Spacers are provided between adjacent coils
(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
62. Greater the secondary leakage flux
(A) less will be the secondary induced e.m.f. (B) less will be the primary induced e.m.f.
(C) less will be the primary terminal voltage (D) none of these
63. The purpose of providing iron core in a step-up transformer is
(A) to provide coupling between primary and secondary
(B) to increase the magnitude of mutual flux
(C) to decrease the magnitude of magnetizing current
(D) to provide all above features

64. Two transformers operating in parallel will share the load depending upon their
(A) leakage reactance (B) per unit impedance (C) efficiencies (D) ratings
65. Room Index is associated with
(A) HVAC (B) Illumination (C) Humidity (D) None
66. What will happen if the transformers working in parallel are not connected with regard to polarity ?
(A) The power factor of the two transformers will be different from the power factor of common load
(B) Incorrect polarity will result in dead short circuit
(C) The transformers will not share load in proportion to their kVA ratings
(D) none of the above
67. If the percentage impedances of the two transformers working in parallel are different, then
(A) transformers will be overheated
(B) power factors of both the transformers will be same
(C) parallel operation will be not possible
(D) parallel operation will still be possible, but the power factors at which the two transformers operate will be different from the power factor of the common load
68. In a transformer the tapings are generally provided on
(A) primary side (B) secondary side (C) low voltage side (D) high voltage side
69. The use of higher flux density in the transformer design
(A) reduces weight per Kva (B) reduces iron losses
(C) reduces copper losses (D) increases part load efficiency
70. The chemical used in breather for transformer should have the quality of

- (A) ionizing air (B) absorbing moisture
(C) cleansing the transformer oil (D) cooling the transformer oil.
71. The chemical used in breather is
(A) asbestos fiber (B) silica sand (C) sodium chloride (D) silica gel
72. Furan test is associated with test of
(A) Motor (B) Transformer (C) IGBT (D) Transistor
73. The transformer ratings are usually expressed in terms of
(A) volts (B) amperes (C) kW (D) kVA
74. The noise resulting from vibrations of laminations set by magnetic forces, is termed as
(A) magnetostriction (B) boo (C) hum (D) zoom
75. Material used for construction of transformer core is usually
(A) wood (B) copper (C) aluminium (D) silicon steel
76. The thickness of laminations used in a transformer is usually
(A) 0.4 - 0.5 mm (B) 4 - 5 mm (C) 14 - 15 mm (D) 25 - 40 mm
77. The function of conservator in a transformer is
(A) to project 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 of temperature of surroundings.
78. In a transformer the resistance between its primary and secondary is
(A) zero (B) 1 ohm (C) 1000 ohms (D) infinite
79. A transformer oil must be free from
(A) sludge (B) odour (C) gases (D) moisture
80. A Buchholz relay can be installed on
(A) auto-transformers (B) air-cooled transformers
(C) welding transformers (D) oil cooled transformers
81. Gas is usually not liberated due to dissociation of transformer oil unless the oil temperature

exceeds

- (A) 50°C (B) 80°C (C) 100°C (D) 150°C

82. The main reason for generation of harmonics in a transformer could be

- (A) fluctuating load (B) poor insulation
(C) mechanical vibrations (D) saturation of core

83. Which of the following property is not necessarily desirable in the material for transformer core ?

- (A) Mechanical strength (B) Low hysteresis loss
(C) High thermal conductivity (D) High permeability

84. Star/star transformers work satisfactorily when

- (A) load is unbalanced only (B) load is balanced only
(C) on balanced as well as unbalanced loads (D) none of these

85. Delta/star transformer works satisfactorily when

- (A) load is balanced only (B) load is unbalanced only
(C) on balanced as well as unbalanced loads (D) none

86. Buchholz's relay gives warning and protection against

- (A) electrical fault inside the transformer itself
(B) electrical fault outside the transformer in outgoing feeder
(C) for both outside and inside faults
(D) none of the above

87. The magnetising current of a transformer is usually small because it has

- (A) small air gap (B) large leakage flux
(C) laminated silicon steel core (D) fewer rotating parts

88. What is the temperature at which both the Fahrenheit and the centigrade scales have the same value?

- (A) -40° (B) -273° (C) -60° (D) -32°

89. What is the unit used to measure the depth of sea?

(A) Parsec (B) Light Year (C) Mile (D) Fathom

90. Lambert's Law is related to .

(A) HVAC (B) Illumination (C) Electrical Conductivity (D) Magnetism

91 .In a Battery, which energy is converted into Electrical energy?

(A) Potential Energy (B) Chemical Energy (C) Heat Energy (D) Sound Energy

92. If a bar magnet is cut length wise into 3 parts, what will the total number of poles?

(A) 6 (B) 3 (C) 4 (D) 12

93. If the temperature inside a room is increased, the relative humidity will .

(A) Decrease (B) Increase (C) Remain constant (D) None

94. In summer, the mirages are seen due to the phenomenon of .

(A) Refraction (B) Total Internal Reflection (C) Contraction (D) None

95. In the visible spectrum which colour has the longest wavelength?

(A) Red (B) Violet (C) Violet (D) Blue

96. In which medium sound travels faster?

(A) Liquid (B) Gas (C) Solid (D) Vacuum

97. Hooke's law is related to

(A) Magnetism (B) Sound (C) Electrical Conductivity (D) Elasticity

98. The filament string in an electric bulb is made of which metal?

(A) Chromium (B) Copper (C) Aluminium (D) Tungsten

99. The velocity of to escape from earth's atmosphere is

(A) 11.2 km/sec (B) 20 km/Sec (C) 220 m/Sec (D) 14 km/Sec

100. Which instrument is used to measure altitudes in aircrafts?

(A) Altimeter (B) Barometer (C) Spherometer (D) Periscope

Answer Key

Question No.	Ans						
1	D	26	A	51	C	76	A
2	D	27	A	52	C	77	D
3	D	28	D	53	D	78	D
4	D	29	B	54	D	79	D
5	B	30	B	55	C	80	D
6	B	31	C	56	B	81	D
7	B	32	B	57	A	82	D
8	B	33	D	58	B	83	C
9	A	34	C	59	B	84	B
10	B	35	C	60	D	85	C
11	D	36	B	61	A	86	A
12	C	37	C	62	A	87	A
13	C	38	C	63	C	88	A
14	A	39	B	64	B	89	D
15	A	40	B	65	B	90	B
16	D	41	D	66	B	91	B
17	D	42	C	67	D	92	A
18	D	43	B	68	C	93	A
19	B	44	A	69	A	94	B
20	A	45	D	70	B	95	A
21	A	46	C	71	D	96	C
22	C	47	D	72	B	97	D
23	A	48	B	73	D	98	D
24	D	49	B	74	C	99	A
25	A	50	B	75	D	100	A