Electricity and magnetism

1. What is the diameter of an atom?

A. About 10^-10 m

B. About 10^-10 cm

C. About 10^-10 mm

D. About 10^-10 μm

View Answer:

Answer: Option A

Solution:

2. The magnitude of the induced emf in a coil is directly proportional to the rate of change of flux linkages. This is known as

A. Joule's Law

B. Faraday's second law of electromagnetic induction

C. Faraday's first law of electromagnetic induction

D. Coulomb's Law

View Answer:

Answer: Option B

Solution:

3. The force of attraction or repulsion between two magnetic poles is inversely proportional to the square of the distance between them. This is known as

A. Newton's first law

B. Faraday's first law of electromagnetic induction

C. Coulomb's first law

D. Coulomb's second law

View Answer:

Answer: Option D

Solution:

4. The net electrical charge in an isolated system remains constant. This is known as

A. Law of conservation of charge

B. Coulomb's first law

C. Coulomb's second law

D. Law of conservation of energy

View Answer:

Answer: Option A

Solution:

5. The point in a magnet where the intensity of magnetic lines of force is maximum

A. Magnetic pole

B. South pole

C. North pole

D. Unit pole

View Answer:

Answer: Option A

Solution:

6. The emf induced in a coil due to the change of its own flux linked with it is called

A. Mutually induced emf

B. Dynamically induced emf

C. Statically induced emf

D. Self induced emf

View Answer:

Answer: Option D

Solution:

7. If the solenoid is gripped by the right hand with the fingers pointing the direction of current flow, the outstretched thumb will then point the north pole. This is known as

A. Right hand rule

B. Helix rule

C. End rule

D. Cork screw rule

View Answer:

Answer: Option B

Solution:

8. The phenomenon by which a subtracts pieces of iron

A. Magnetism

B. Electromagnetism

C. Naturalism

D. Materialism

View Answer:

Answer: Option A

Solution:

9. A law that states that the current in a thermionic diode varies directly with the three-halves power of anode voltage and inversely with the square of the distance between the electrodes, provided operating conditions are such that the current is limited only by the space charge.

A. Hall's law

B. Joule's law

C. Child's law

D. Coulomb's law

View Answer:

Answer: Option C

Solution:

10. Who developed the electromagnetic theory of light in 1862?

A. Heinrich Rudolf Hertz

B. Wilhelm Rontgen

C. James Clerk Maxwell

D. Andre Ampere

View Answer:

Answer: Option C

Solution:

11. The space outside the magnet where its pole have a force of attraction or repulsion on a magnetic pole is called

A. Magnetic field

B. Electric field

C. Electromagnetic field

D. Free Space Field

View Answer:

Answer: Option A

Solution:

12. States that the ratio of the thermal conductivity is proportional to the absolute temperature for all metals.

A. Wien's displacement law

B. Hartleys law

C. Hall's law

D. Wiedemann Franz law

View Answer:

Answer: Option D

Solution:

13. Materials whose permeabilities are slightly greater than that of free space

A. Paramagnetic

B. Non- magnetic

C. Ferromagnetic

D. Diamagnetic

View Answer:

Answer: Option A

Solution:

14. Who discovered the relationship between magnetism and electricity that serves as the foundation for the theory of electromagnetism?

A. Luigi Galvani

B. Hans Christian Oersted

C. Andre Ampere

Charles Coulomb

View Answer:

Answer: Option B

Solution:

15. Materials that have very high permeabilities (hundreds and even thousands times of that of free space)

A. Paramagnetic

B. Non- magnetic

C. Ferromagnetic

D. Diamagnetic

View Answer:

Answer: Option C

Solution:

16. If on looking at any one end of a solenoid; the direction of current flow is found to be clockwise then the end under observation is a south pole. This is known as

A. Right hand rule

B. Left hand rule

C. Cork screw rule

D. End Rule

View Answer:

Answer: Option D

Solution:

17. The straight line passing through the two poles of magnet is called

A. Real axis

B. Cartesian axis

C. Magnetic axis

D. Imaginary axis

View Answer:

Answer: Option C

Solution:

18. Who discovered the most important electrical effects which is the magnetic effect?

A. Hans Christian Oersted

B. Sir Charles Wheatstone

C. Georg Ohm

D. James Clerk Maxwell

View Answer:

Answer: Option A

Solution:

19. Define as that pole which when placed in air from a similar and equal pole repels it with a force of newtons

A. North pole

B. South pole

C. Unit pole

D. Magnetic pole

View Answer:

Answer: Option C

Solution:

20. Referred to as the specific reluctance of a material

A. Resistivity

B. Reluctivity

C. Conductivity

D. Permeability

View Answer:

Answer: Option B

Solution:

21. Which of the following magnetic materials can be easily magnetized in both direction?

A. Soft magnetic materials

B. Hard magnetic materials

C. High hysteresis loss materials

D. Low hysteresis loss materials

View Answer:

Answer: Option A

Solution:

22. The force which set ups or tends to set up magnetic flux in a magnetic circuit

A. Dynamic force

B. Electromotive force

C. Potential difference

D. Magnetomotive force

View Answer:

Answer: Option D

Solution:

23. A law establishing the fact that the algebraic sum of the rises and drops of the mmf around a closed loop of a magnetic circuit is equal to zero.

A. Kirchhoff's circuital law

B. Maxwell's circuital law

C. Ampere's circuital law

D. Coulomb's circuital law

View Answer:

Answer: Option C

Solution:

24. The phenomenon by which a magnetic substance becomes a magnet when it is place near a magnet

A. Magnetic effect

B. Magnetic phenomenon

C. Magnetic induction

D. Electromagnetic induction

View Answer:

Answer: Option C

Solution:

25. The magnetic potential in a magnetic circuit can be measured in terms of

A. Mmf

B. Emf

C. Farad

D. Coulomb

View Answer:

Answer: Option A

Solution:

26. Who demonstrated that there are magnetic effects around every current-carrying conductor and that current-carrying conductors can attract and repel each other just like magnets?

A. Luigi Galvani

B. Hans Christian Oersted

C. Charles Coulomb

D. Andre Ampere

View Answer:

Answer: Option D

Solution:

27. Lenz' law states that the direction of the induced emf and hence current

A. Is determined by the rate of current flux

B. Is found by the right hand rule

C. Is found by the left hand rule

D. Always opposes the cause producing it

View Answer:

Answer: Option D

Solution:

28. Whenever a flux inking a coil or current changes, an emf is induced in it. This is known as

A. Joule's Law

B. Coulomb's Law

C. Faraday's first law of electromagnetic induction

D. Faraday's second law of electromagnetic induction

View Answer:

Answer: Option C

Solution:

29. Which of the following materials has permeability slightly less than that of free space?

A. Paramagnetic

B. Non- magnetic

C. Ferromagnetic

D. Diamagnetic

View Answer:

Answer: Option D

Solution:

30. The property of a material which opposes the creation of magnetic flux in it

A. Resistance

B. Reluctance

C. Permeance

D. Conductance

View Answer:

Answer: Option B

Solution:

31. Who discovered superconductivity in 1911?

A. Kamerlingh Onnes

B. Alex Muller

C. Geory Bednorz

D. Charles Coulomb

View Answer:

Answer: Option A

Solution:

32. A substance that attracts pieces iron

A. Conductor

B. Semiconductor

C. Magnet

D. All of the above

View Answer:

Answer: Option C

Solution:

33. The point in a magnet where the intensity of magnetic lines of force is maximum

A. Magnetic pole

B. South pole

C. North pole

D. Unit pole

View Answer:

Answer: Option A

Solution:

34. Lenz's law is the consequence of the law of conservation of

A. Energy

B. Charge

C. Field lines

D. Momentum

View Answer:

Answer: Option A

Solution:

35. Defined as a closed path in which magnetic induction or flux flows

A. Electric circuit

B. Magnetic circuit

C. Electronic circuit

D. Electromagnetic circuit

View Answer:

Answer: Option B

Solution:

36. Who demonstrated the theory of electromagnetic induction in 1831?

A. Michael Faraday

B. Andre Ampere

C. James Clerk Maxwell

Charles Coulomb

View Answer:

Answer: Option A

Solution:

37. Who discovered that a current-carrying conductor would move when placed in a magnetic field?

A. Michael Faraday

B. Andre Ampere

C. Hans Christian Oersted

D. Gustav Robert Kirchhoff

View Answer:

Answer: Option A

Solution:

38. Whenever a conductor cuts magnetic flux, an emf is induced in it. This is known as

A. Coulomb's law

B. Joule's law

C. Faraday's law

D. Ohm's law

View Answer:

Answer: Option C

Solution:

39. A law that states that the polarity of the induced voltage will oppose the change in magnetic flux causing the induction.

A. Joule's law

B. Faraday's law

C. Coulomb's law

D. Lenz' law

View Answer:

Answer: Option D

Solution:

40. If you hold the conductor with right hand so that the stretched thumb points in the direction of the current, then encircling fingers will give the direction of magnetic lines of force round the conductor. This is known as

A. Left hand cork screw rule

B. Right hand cork screw rule

C. Left hand rule

D. Right hand rule

View Answer:

Answer: Option D

Solution:

41. If the right handed bottle-opener cork screw is assumed to be along the conductor so as to advance in the direction of current flow, the motion of its handle will indicate the direction of magnetic flux produced around the conductor. This is known as

A. Right hand rule

B. Left hand rule

C. Cork screw rule

D. End rule

View Answer:

Answer: Option C

Solution:

42. The process by which an emf and hence current is generated or induced in a conductor when there is a change in the magnetic flux linking the conductor is called

A. Electromagnetic induction

B. Mutual induction

C. Faraday's law

D. Electromagnetic interference

View Answer:

Answer: Option A

Solution:

43. The emf induced in a coil due to the changing current of another neighboring coil is called

A. Mutually induced emf

B. Self induced emf

C. Statically induced emf

D. Dynamically induced emf

View Answer:

Answer: Option A

Solution:

44. When a conductor is stationary and the magnetic field is moving or changing the emf induced is called

A. Statically induced emf

B. Mutually induced emf

C. Self induced emf

D. Dynamically induced emf

View Answer:

Answer: Option A

Solution:

45. Which of the following is a natural magnet?

A. Steel

B. Magnesia

C. Lodestone

D. Soft iron

View Answer:

Answer: Option C

Solution:

46. The branch of Engineering which deals with the magnetic effect of electric current is known as

A. Magnetism

B. Electromagnetism

C. Electrical engineering

D. Electronics engineering

View Answer:

Answer: Option B

Solution:

47. The total number of magnetic lines of force in a magnetic field is called

A. Magnetic flux

B. Magnetic flux density

C. Magnetic flux intensity

D. Magnetic potential

View Answer:

Answer: Option A

Solution:

48. The current of electric circuit is analogous to which quantity of a magnetic circuit

A. Mmf

B. Flux

C. Flux density

D. Reluctivity

View Answer:

Answer: Option B

Solution:

49. It is the reciprocal of reluctance and implies the case of readiness with which magnetic flux is developed.

A. Resistance

B. Conductance

C. Permeance

D. Inductance

View Answer:

Answer: Option C

Solution:

50. The ability of a material to conduct magnetic flux through it.

A. Permittivity

B. Reluctivity

C. Conductivity

D. Permeability

View Answer:

Answer: Option D

Solution:

51. The ratio of the permeability of material to the permeability of air or vacuum.

A. Relative permeability

B. Relative permittivity

C. Relative conductivity

D. Relative reluctivity

View Answer:
52. Permeance is analogous to

A. Conductance

B. Reluctance

C. Admittance

D. Resistance

View Answer:
53. The property of magnetic materials of retaining magnetism after withdrawal of the magnetizing force is known as

A. Retentivity

B. Reluctivity

C. Resistivity

D. Conductivity

View Answer:
54. The quantity of magnetism retained by a magnetic material after withdrawal of the magnetizing force is called

A. Leftover magnetism

B. Hysteresis

C. Residual magnetism

D. Coercivity

View Answer:
55. The amount of magnetizing force to counter balance the residual magnetism of a magnetic material is referred to as

A. Reluctivity

B. Susceptivity

C. Coercivity

D. Retentivity

View Answer:
56. The ratio of the total flux (flux in iron path) to the useful flux (flux in air gap)

A. Leakage flux

B. Leakage current

C. Leakage coefficient

D. Leakage factor

View Answer:
57. Defined as the number of lines per unit area through any substance in a plane at right angles to the lines of force

A. Flux

B. Flux lines

C. Flux density

D. Flux intensity

58. Defined as the flux density produced in it due to its own induced magnetism

A. Magnetic field intensity

B. Electric field intensity

C. Electromagnetic field intensity

D. Intensity magnetization

59. The force acting on a unit n- pole placed at that point is called

A. Magnetic field intensity

B. Electric field intensity

C. Electromagnetic field intensity

D. Intensity magnetization

60. The ratio between the intensity of magnetization produced in a substance to the magnetizing force producing it

A. Magnetic Reluctivity

B. Magnetic Resistivity

C. Magnetic susceptibility

D. Magnetic conductivity

61. The lagging effect between flux density of the material and the magnetizing force applied

A. Permeance

B. Eddy current

C. Hysteresis

D. Reluctance

62. Refers to the magnetic lines

A. Flux

B. Hysteresis

C. Current

D. Magnetomotive force

View Answer:
63. Refers to the non- metallic materials that have the ferromagnetic properties of iron.

A. Ferrites

B. Ferromagnetic

C. Diamagnetic

D. Paramagnetic

View Answer:
64. The air space between poles of magnets

A. Air gap

B. Free space

C. Vacuum

D. Atmosphere

View Answer:
65. One that has magnetic poles produced by internal atomic structure with no external current necessary

A. Diamagnetic

B. Permanent magnets

C. Paramagnetic

D. Electromagnetic

View Answer:
66. Magnetic effects of the earth as a huge magnet with north and south poles.

A. Diamagnetic

B. Ferromagnetic

C. Terrestrial magnetism

D. Terrestrial ferromagnetism

View Answer:

67. Used to maintain strength of magnetic field

A. Container

B. Air gap

C. Keeper

D. Source

View Answer:
68. All magnetic field originates from

A. moving electric charge

B. Iron atoms

C. Magnetic domain

D. Permanent magnets

View Answer:
69. Magnetic fields do not interact with

A. Moving permanent magnets

B. Stationary permanent magnets

C. Moving electric charges

D. Stationary electric charges

View Answer:
70. The magnetic field inside a solenoid

A. is zero

B. is uniform

C. increases with distance from the axis

D. decreases with distance from the axis

View Answer:
71. When the ferromagnetic substance is inserted in a current- carrying solenoid, the magnetic field is

A. Greatly decreased

B. Greatly increased

C. Slightly decreased

D. Slightly increased

View Answer:
72. The magnetic field of a bar magnet most closely resembles the magnetic field of

A. a horseshoe magnet

B. a straight current- carrying wire

C. a stream of electrons moving parallel to one another

D. a current- carrying wire loop

View Answer:
73. The magnetic field of a magnetized iron bar when strongly heated

A. Becomes weaker

B. Becomes stronger

C. Reverses in direction

D. is unchanged

View Answer:
74. A permanent magnet does not exert a force on

A. an unmagnetized iron bar

B. a magnetized iron bar

C. a moving electric charge

D. a stationary electric charge

View Answer:
75. A current if flowing east along a power line. If the earth's field is neglected, the direction of the magnetic field below it is

A. North

B. South

C. East

D. West

View Answer:
76. The emf produced in a wire by its motion across a magnetic field does not depend upon the

A. Diameter of the wire

B. Length of the wire

C. Orientation of the wire

D. Flux density of the field

View Answer:
77. The induced emf in a wire loop that is moved parallel to a uniform magnetic field is

A. Zero

B. Dependent on the area of the loop

C. Dependent on the shape of the loop

D. Dependent on the magnitude of the field

View Answer:
78. When a wire loop is rotated in a magnetic field the direction of the induced emf changes one in every _____ revolution

A. 1/3

B. 1/2

C. 1/4

D. 2/3

View Answer:
79. The magnetic flux through a wire loop in a magnetic field does not depend on

A. The area of the loop

B. The magnitude of the field

C. The shape of the loop

D. The angle between the plane of the loop and the direction

View Answer:
80. Steel is hard to magnetize because of its

A. Low permeability

B. High permeability

C. High density

D. High retentivity

View Answer:
81. Paramagnetic substance has a relative permeability of

A. Slightly less than one

B. Equal to one

C. Slightly equal to one

D. Very much greater than one

View Answer:
82. A group of magnetically aligned atoms is called

A. Range

B. Lattice

C. Domain

D. Crystal

View Answer:
83. The force between two magnetic poles varies with the distance between them. The variation is _____ to the square of that distance.

A. Equal

B. Greater than

C. Directly proportional

D. Inversely proportional

View Answer:
84. Permeability means

A. The conductivity of the material for magnetic lines of force

B. The magnetization test in the material after exciting field has been removed

C. The strength of an electromagnet

D. The strength of the permanent magnet

View Answer:
85. _____ is an electromagnet with its core in the form of a close magnetic ring.

A. Solenoid

B. Paraboloid

C. Toroid

D. Cycloid

View Answer:
86. A magnetic material losses its ferromagnetic properties at a point called

A. Curie temperature

B. Inferred absolute temperature

C. Room temperature

D. Absolute temperature

View Answer:
87. Small voltages generated by a conductor with current in an external magnetic field.

A. Skin effect

B. Magnetic effect

C. Hall effect

D. Flywheel Effect

View Answer:
88. The emission of electrons from hot bodies is called

A. Radiation effect

B. Edison effect

C. Skin effect

D. Half effect

View Answer:
89. The ability of a mechanically stressed ferromagnetic wire to recognize rapid switching of magnetization when subjected to a dc magnetic field.

A. Wartheim effect

B. Wiedemann effect

C. Wiegand effect

D. Edison effect

90. An effect which is generally used in the gausameter to measure flux density.

A. Skin effect

B. Magnetic effect

C. Hall effect

D. Flywheel effect

91. The contribution to the ionization in an ionization chamber by electrons liberated from the walls.

A. Skin effect

B. Walt effect

C. Hall effect

D. Edison effect

92. The tiniest element of matter

A. Atom

B. Proton

C. Electron

D. Neutron

93. All matters (gas, liquid and solid) are composed of

A. Neutrons

B. Particles

C. Electrons

D. Atoms

94. The simplest type of atom to exist is the _____ atom.

A. Helium

B. Hydrogen

C. Boron

D. Oxygen

View Answer:
95. What revolves about the positive nucleus in a definite orbit?

A. Atom

B. Proton

C. Electron

D. Neutron

View Answer:
96. The uncharged particles which have no effect on its atomic charge.

A. Nucleons

B. Electrons

C. Protons

D. Neutrons

View Answer:
97. The diameter of a hydrogen atom is approximately _____ cm.

A. 1.1×10^{-6}

B. 1.1×10^{-7}

C. 1.1×10^{-8}

D. 1.1×10^{-9}

View Answer:
98. The K shell or the first shell has how many permissible number of orbiting electrons?

A. 1

B. 2

C. 3

D. 4

View Answer:
99. Germanium atom has _____ protons and _____ electrons.

A. 32, 32

B. 32, 42

C. 42, 32

D. 34, 34

View Answer:
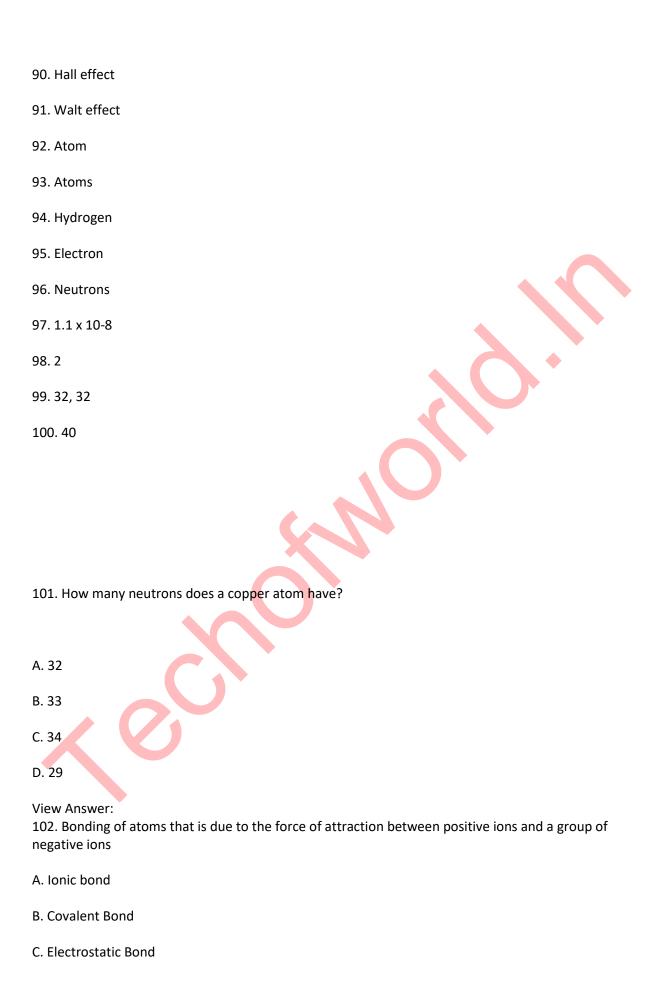100. A germanium atom has an atomic weight of 72. How many neutrons are there?

A. 32

B. 40

C. 34

D. 36

Answer:

51. Relative permeability

52. Conductance

53. Retentivity

54. Residual magnetism

55. Coercivity

56. Leakage factor

57. Flux density

58. Intensity magnetization

59. Magnetic field intensity

60. Magnetic susceptibility

61. Hysteresis

62. Flux

63. Ferrites

64. Air gap

65. Permanent magnets

66. Terrestrial magnetism

67. Keeper

68. moving electric charge

69. Stationary electric charges

70. is uniform

71. Greatly increased

72. a current- carrying wire loop

73. Becomes weaker

74. a stationary electric charge

75. North

76. Diameter of the wire

77. Zero

78. 1/2

79. The shape of the loop

80. Low permeability

81. Slightly equal to one

82. Domain

83. Inversely proportional

84. The conductivity of the material for magnetic lines of force

85. Toroid

86. Curie temperature

87. Hall effect

88. Edison effect

89. Wiegand effect

90. Hall effect

91. Walt effect

92. Atom

93. Atoms

94. Hydrogen

95. Electron

96. Neutrons

97. 1.1 x 10-8

98. 2

99. 32, 32

100. 40

101. How many neutrons does a copper atom have?

A. 32

B. 33

C. 34

D. 29

View Answer:

102. Bonding of atoms that is due to the force of attraction between positive ions and a group of negative ions

A. Ionic bond

B. Covalent Bond

C. Electrostatic Bond

D. Metallic bond

View Answer:
103. An alloy of 22 percent iron and 78 per cent nickel.

A. Permalloy

B. Alnico

C. Constantan

D. Manganin

View Answer:
104. An alloy of 40 percent iron and 60 percent nickel.

A. Alnico

B. Permalloy

C. Hipernik

D. Manganin

View Answer:
105. A commercial alloy of aluminum nickel, and iron with cobalt, copper and titanium added to produce about 12 grades.

A. Alnico

B. Brass

C. Aluminum

D. Constantan

View Answer:
106. The idea of preventing one component from affecting another through their common electric and magnetic field is referred to as

A. Hall effect

B. Grounding

C. Shielding

D. Limiting

View Answer:
107. The physical motion resulting from the forces of magnetic fields is called

A. Motor action

B. Rotation

C. Repulsion

D. Torque action

View Answer:
108. Flux linkages equals

A. Flux times area of core

B. Flux times number of turns times area of core

C. Flux times number of turns times length of core

D. Flux times number of turns

View Answer:
109. Which of the following is a vector quantity?

A. Magnetic potential

B. Magnetic field intensity

C. Magnetic permeability

D. Flux density

View Answer:
110. Which of the following electric quantities is vector in character?

A. Field

B. Charge

C. Energy

D. Potential Difference

View Answer:
111. The quantity 10^6 Maxwell's is equivalent to one

A. Weber

B. Gauss

C. Gilbert

D. Tesla

View Answer:
112. What is the unit of reluctance?

A. Maxwell

B. Gauss

C. At/Wb

D. Weber

View Answer:
113. What is the SI unit of magnetic flux?

A. Tesla

B. Weber

C. Maxwell

D. Gauss

View Answer:
114. What is the unit of magnetomotive force?

A. Volt

B. Tesla

C. Ampere – turn

D. Weber

View Answer:
115. What is the cgs unit of magnetomotive force?

A. Gilbert

B. Ampere- turn

C. Maxwell

D. Weber

View Answer:
116. The unit of flux is _____ in cgs system.

A. Tesla

B. Gilbert

C. Maxwell

D. Oersted

View Answer:
117. Flux density is measured in

A. Tesla

B. Weber

C. Ampere- turn

D. Maxwell

View Answer:
118. The customary energy unit in atomic and nuclear physics is

A. Joule

B. Volt- coulomb

C. electron-volt

D. Walt- second

View Answer:
119. One ampere- turn is equivalent to _____ gilberts.

A. 1.16

B. 1.26

C. 1.36

D. 1.46

View Answer:
120. The magnetic flux of 2000 lines is how many Maxwells?

A. 1000

B. 2000

C. 4000

D. 8000

View Answer:
121. How much is the flux in Weber in the above problem?

A. 2 x 10^-5

B. 2 x 10^-3

C. 2 x 10^5

D. 2 x 10^3

View Answer:
122. One oersted (Oe) is equivalent to _____ Gb/cm.

A. 1

B. 10

C. 100

D. 1000

View Answer:
123. One electron volt (1 eV) is equivalent to _____ joules

A. 1.3 x 10^-19

B. 1.4 x 10^-19

C. 1.5 x 10^-19

D. 1.6 x 10^-19

View Answer:
124. An electron- volt (eV) is a unit of

A. Energy

B. Potential difference

C. Charge

D. Momentum

View Answer:
125. The unit of electrical energy is

A. Joule

B. Watt- second

C. Kilowatt- hour

D. All of these

View Answer:
126. Electrons at the outer shell are called

A. Outer shell electrons

B. Inner shell electrons

C. Semiconductor electrons

D. Valence electrons

View Answer:
127. Which of the following has the least number of valence electrons?

A. Conductor

B. Semiconductor

C. Insulator

D. Semi- insulator

View Answer:
128. A good conductor has how many valence electrons?

A. 1

B. 4

C. 2

D. 8

View Answer:
129. Which element has four valence electrons?

A. Conductor

B. Insulator

C. Semiconductor

D. Semi- insulator

View Answer:
130. A negative ion results when an atom gains an additional

A. Electron

B. Proton

C. Neutron

D. Atom

View Answer:
131. An atom or a group of atoms that carries a net electric charge.

A. Positive ion

B. Negative ion

C. Ion

D. Electron

View Answer:
132. Hysteresis refers to the _____ between flux density of the material and the magnetizing force applied.

A. Leading effect

B. Ratio

C. Equality

D. Lagging effect

View Answer:
133. Hydrogen is an example of a _____ material.

A. Paramagnetic

B. Diamagnetic

C. Ferromagnetic

D. Non- magnetic

View Answer:
134. Cobalt is an example of a _____ material.

A. Paramagnetic

B. Diamagnetic

C. Ferromagnetic

D. Non- magnetic

135. The evaporation of electrons from a heated surface is called

A. Radiation

B. Convection

C. Thermionic emission

D. Conduction

136. Electron is a Greek word for

A. amber

B. Fire

C. Stone

D. Heat

137. Gases whose particles are charged are known as

A. Conductors

B. Insulators

C. Gaseous Conductors

D. Plasma

138. What principle states that each electron in an atom must have a different set of quantum numbers?

A. Inclusion principle

B. Exclusion principle

C. Quantum principle

D. Electron principle

139. The energy stored in an electrostatic field or electromagnetic field is called

A. Electromagnetic energy

B. Kinetic energy

C. Potential energy

D. Rest energy

View Answer:
140. Which of the following statements is TRUE?

A. Silicon dioxide is a good

B. The current carriers in conductors are valence electrons

C. For conductors, the valence electron are strongly attracted to the nucleus

D. The valence electrons are located in the nucleus of an atom

View Answer:
141. How many electrons are needed in the valence orbit to give a material's stability?

A. 8

B. 4

C. 6

D. 5

View Answer:
142. Residual magnetism refers to the flux density, which exists in the iron core when the magnetic field intensity is

A. Minimized

B. Reduced to zero

C. Maximize

D. Unity

View Answer:
143. Magnetic intensity is a

A. Phasor quantity

B. Physical quantity

C. Scalar quantity

D. Vector quantity

View Answer:
144. The core of a magnetic equipment uses a magnetic material with

A. Least permeability

B. Low permeability

C. Moderate permeability

D. High permeability

View Answer:
145. Which of the following is a paramagnetic material?

A. Carbon

B. Copper

C. Bismuth

D. Oxygen

View Answer:
146. The permeability of permalloy is

A. Very much greater than permeability of air

B. Slightly greater than permeability of air

C. Slightly less than permeability of air

D. Equal to the permeability of air

View Answer:
147. A t/m is a unit of

A. Mmf

B. Emf

C. Reluctance

D. Magnetizing force

View Answer:
148. The force between two magnetic poles is _____ their poles strength.

A. equal to

B. directly proportional to

C. inversely proportional to

D. directly proportional to the square root of

View Answer:
149. The magnetic energy stored in an inductor is _____ current.

A. Directly proportional to

B. Inversely proportional to

C. Directly proportional to the square of

D. Inversely proportional to the square of

View Answer:
150. One of the common application of an air- cored choke.

A. Radio frequency

B. Audio frequency

C. Power supply

D. Power transformer

Answer

101. 34

102. Metallic bond

103. Permalloy

104. Hipernik

105. Alnico

106. Shielding

107. Motor action

108. Flux times number of turns
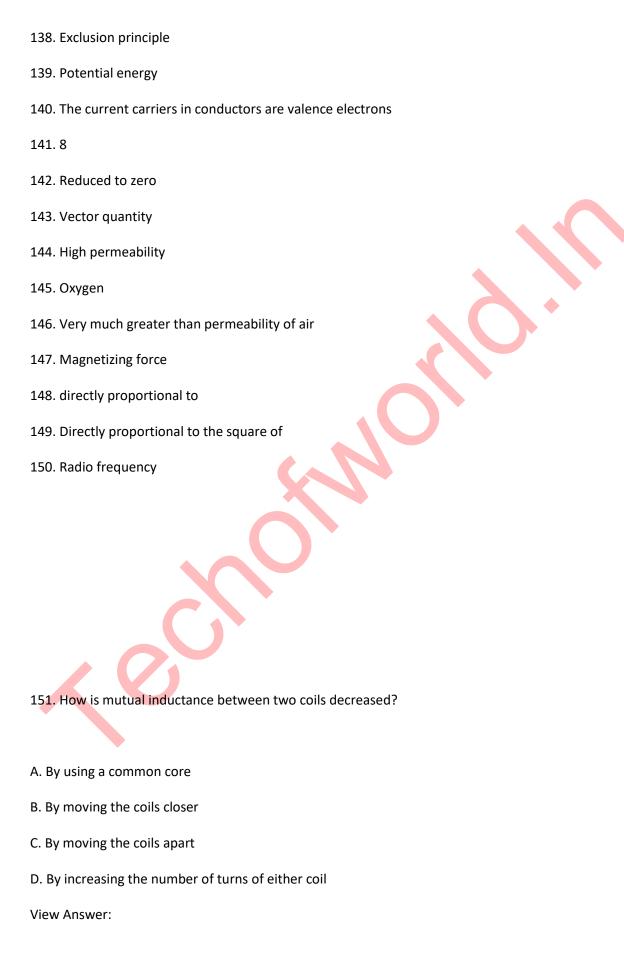
109. Magnetic field intensity

110. Field

111. Weber

112. At/Wb

113. Weber

114. Ampere – turn

115. Gilbert

116. Maxwell

117. Tesla

118. electron-volt

119. 1.26

120. 2000

121. 2 x 10-5

122. 1

123. 1.6 x 10-19

124. Energy

125. All of these

126. Valence electrons

127. Conductor

128. 1

129. Semiconductor

130. Electron

131. Ion

132. Lagging effect

133. Diamagnetic

134. Ferromagnetic

135. Thermionic emission

136. amber

137. Plasma

138. Exclusion principle

139. Potential energy

140. The current carriers in conductors are valence electrons

141. 8

142. Reduced to zero

143. Vector quantity

144. High permeability

145. Oxygen

146. Very much greater than permeability of air

147. Magnetizing force

148. directly proportional to

149. Directly proportional to the square of

150. Radio frequency

151. How is mutual inductance between two coils decreased?

A. By using a common core

B. By moving the coils closer

C. By moving the coils apart

D. By increasing the number of turns of either coil

View Answer:

152. A magnetic field is

A. The current flow through space around a permanent magnet

B. The force set up when current flows through a conductor

C. The force that drives current through a resistor

D. The force between the plates of a charged capacitor

View Answer:
153. Ohm's law can be used only to a _____ circuit or component.

A. Unilateral

B. Exponential

C. Trivalent

D. Linear

View Answer:
154. When the current flows, the magnetic field conductor is in what direction?

A. The same as the current direction

B. Opposite the current direction

C. Omnidirectional

D. In the direction determined by the left hand rule

View Answer:
155. The magnetic field around the conductor is determined by the

A. Size of the conductor

B. Amount of current

C. Current divided by the resistance

D. Resistance divided by the current

View Answer:
156. Back emf refers to the

A. Current equal to the applied emf

B. Opposing emf

C. Current opposing the applied emf

D. Voltage opposing the applied emf

View Answer:
157. The magnetic flux through a coil changes. This results to the induced emf acting in a direction as to

A. Oppose the change

B. Aid the change

C. Either oppose or aid the change

D. Neither oppose nor aid the change

View Answer:
158. A magnetic flux of 2.5 x 10^4 Wb through an area of 5 x 10^4 square meters results in

A. 5 Wb

B. 0.5 Tesla of flux density

C. 5 x 10^-5 Wb of flux

D. 5000 Tesla of flux density

View Answer:
159. If a 20 V potential is applied across a relay coil with 50 turns having 1 Ω of resistance, the total magnetomotive producing magnetic flux in the circuit is

A. 10 Wb

B. 50 T

C. 1000 A t/m

D. 1000 A.t

View Answer:
160. What is the reluctance of a magnetic path having a length of 2 x 10^-3 m and cross- sectional area of 2.5 x 10^-3 m^2?

A. 6366 A.t/Wb

B. 6000 A.t/Wb

C. 8 x 10^-3 A.t/Wb

D. 0.8 A.t/Wb

View Answer:

161. Calculate the permeability (in T/A. t/m) of a magnetic material that has a relative permeability of 300

A. 3.78 x 10^-4

B. 3.78 x 10^-5

C. 3.78 x 10^-3

D. 3.78 x 10^-6

View Answer:

162. Calculate the flux density that will be produced by the field intensity of 2000 a. t/m for a permeability of 126 x 10^-6 T/A.t/m

A. 0.252 G

B. 0.252 x 10^-2 T

C. 0.252 T

D. 0.252 x 10^-2 G

View Answer:

163. How many turns are needed to produce a magnetomotive force of 1000 A.t for a coil with 6 amperes?

A. 6000 turns

B. 600 turns

C. 167 turns

D. 67 turns

View Answer:

164. A 6- V battery is connected across a solenoid of 100 turns having a resistance of 2 Ω, Calculate the number of ampere turns?

A. 100

B. 50

C. 300

D. 600

View Answer:

165. What determines the atomic number of an element?

A. The number of protons

B. The number of electrons

C. The number of neutrons

D. The number of neutrons and protons

View Answer:
166. One of the solid structures in which the position of the atoms or ions are predetermined

A. Crystalline solid

B. Amorphous solid

C. Polycrystalline solid

D. Poly- amorphous solid

View Answer:
167. Mmf in a magnetic circuit corresponds to _____ in an electric circuit

A. Emf

B. Voltage drop

C. Electric Field Intensity

D. Potential gradient

View Answer:
168. What solid has no defined crystal structure except perhaps in the arrangement of the nearest neighboring atoms or ions?

A. Crystalline

B. Amorphous

C. Polycrystalline

D. Poly- amorphous

View Answer:
169. Amorphous solid is also called

A. Crystalline

B. Non- crystalline

C. Polycrystalline

D. Homogenous

170. A principle that states that only two electrons with different spins are allowed to exist in a given orbit

A. Bohr's principle

B. Pauli exclusion principle

C. Avogadro's principle

D. Coulomb's principle

View Answer:

171. What bond is formed when one or more electrons in the outermost energy orbit of an atom are transferred to another?

A. Ionic

B. Covalent

C. Metallic

D. Van der Waals

View Answer:

172. In electro-mechanical conversion devices like generators and motors the reason why a small air gap is left between the rotor and stator is to

A. permit mechanical clearance

B. increase flux density in air gap

C. decrease the reluctance of magnetic path

D. complete the magnetic path

View Answer:

173. What bond is formed when electrons in the outermost energy orbits of the atoms are shared between two or more electrons?

A. Ionic

B. Covalent

C. Metallic

D. Van der Waals

View Answer:

174. Why is it that the magnitude of magnetomotive force required for air gap is much greater than that required for iron part of a magnetic circuit?

A. Because air is a gas

B. Because air has the highest relative permeability

C. Because air is a conductor of magnetic flux

D. Because air has the lowest relative permeability

View Answer:
175. What type of bond is formed when there exists some form of collective interactions between the (negatively charged) electrons and (positively charged) nuclei in a solid?

A. Ionic

B. Covalent

C. Metallic

D. Van der Waals

View Answer:
176. Permeance of a magnetic circuit is _____ the cross-sectional area of the circuit.

A. directly proportional to

B. inversely proportional to

C. dependent of

D. independent of

View Answer:
177. Formed when there exist distant electronic interactions between (opposite) charges present in the neighboring atoms or molecules.

A. Ionic bond

B. Covalent bond

C. Metallic bond

D. Van der Waals bond

View Answer:
178. Defined as the ratio of the volume occupied by the atoms or ions in a unit cell divided by the volume of the unit cell and is used to measure the compactness of a crystal.

A. Atomic packing factor (APF)

B. Ionic Packing Ratio (IPR)

C. Atomic compacting factor (ACF)

D. Ionic compacting ratio (ICR)

View Answer:
179. A factor used to correct for the electrostatic forces of the more distant ions in an ionic solid.

A. Avogadro's number

B. Planck's constant

C. Boltzmann's constant

D. Madelung constant

View Answer:
180. The conduction of electricity across the surface of a dielectric is called

A. creepage

B. skin effect

C. surface effect

D. crosstalk

View Answer:
181. A magnetic circuit carries a flux ϕi in the iron part and a flux ϕg in the air gap. What is the leakage coefficient?

A. ϕi/ ϕg

B. ϕi × ϕg

C. ϕg /ϕi

D. ϕi + ϕg

View Answer:
182. A law stating that the magnetic susceptibilities of most paramagnetic substances are inversely proportional to their absolute temperatures.

A. Curie's Law

B. Child's Law

C. CR Law

D. Curie-Weiss Law

183. The reluctance of the magnetic circuit is _____ relative permeability of the material comprising the circuit.

A. directly proportional to

B. inversely proportional to

C. independent of

D. dependent of

184. A law relating between the magnetic and electric susceptibilities and the absolute temperatures which is followed b ferromagnets, antiferromagnets, non-polar ferroelectrics, antiferroelectrics and some paramagnets.

A. Curie's Law

B. Child's Law

C. CR Law

D. Curie-Weiss Law

185. Theory of ferromagnetic phenomena which assumes each atom is a permanent magnet which can turn freely about its center under the influence of applied field and other magnets.

A. Ewing's theory of ferromagnetism

B. Oersted's ferromagnetism theory

C. Maxwell's magnetic theory

D. Ampere's circuital law

186. The reluctance of a magnetic circuit varies with

A. length × area

B. area ÷ length

C. length ÷ area

D. length + area

187. A theorem which states that an electric current flowing in a circuit produces a magnetic field at external points equivalent to that due to a magnetic shell whose bounding edge is the conductor and whose strength of the current.

A. Joule's law

B. Faraday's law

C. Volta's theorem

D. Ampere's theorem

View Answer:
188. What is the usual value of leakage coefficient for electrical machines?

A. 0.5 to 1

B. 1 to 5

C. 5 to 10

D. 1.15 to 1.25

View Answer:
189. The science of adapting electronics to aerospace flight.

A. Avionics

B. Aerotronics

C. Aerodynamics

D. Astrionics

View Answer:
190. The reluctance of a magnetic circuit is not dependent on which of the following?

A. Number of turns of coil

B. Magnetomotive force

C. Flux density in the circuit

D. Current in the coil

View Answer:
191. Another term for corona discharge.

A. Lightning

B. Sparking

C. Aurora

D. Corona Effect

View Answer:
192. The B-H curve for _____ is a straight line passing through the origin.

A. cobalt

B. air

C. hardened steel

D. soft iron

View Answer:
193. The phenomenon that when an electric current passes through an anisotropic crystal, there is an absorption or liberation of heat due to the non-uniformity in current distribution.

A. Bridgman effect

B. Corona effect

C. Dember effect

D. Destriau effect

View Answer:
194. The B-H curve of _____ is not a straight line.

A. air

B. wood

C. silicon steel

D. soft iron

View Answer:
195. If a magnetic flux cuts across 200 turns at a rate of 2 Wb/s, the induced voltage according to Faraday's law is about

A. 400 V

B. 100 V

C. 200 V

D. 600 V

196. What is the SI unit of reluctance?

A. At

B. At/m

C. N/Wb

D. At/Wb

197. A magnetizing force of 1000 AT/m will produce a flux density of _____ in air.

A. 1.257 mWb/m^2

B. 0.63 Wb/m^2

C. 1.257 Wb/m^2

D. 0.63 mWb/m^2

198. Hysteresis loss can be reduced by one of the following.

A. Increasing mmf of the circuit

B. Using material narrow hysteresis loop

C. Using ferromagnetic core

D. Laminating the magnetic circuit

199. The core of a transformer heats up when its primary is fed from an ac source because of

A. permeability

B. ferromagnetism

C. reluctance of core

D. hysteresis loss

200. Which of the following materials has the least hysteresis loop area?

A. soft iron

B. silicon steel

C. hard steel

D. wrought iron

View Answer:

151. By moving the coils apart

152. The force set up when current flows through a conductor

153. Linear

154. In the direction determined by the left hand rule

155. Amount of current

156. Voltage opposing the applied emf

157. Oppose the change

158. 0.5 Tesla of flux density

159. 1000 A.t

160. 6366 A.t/Wb

161. 3.78 x 10-4

162. 0.252 T

163. 167 turns

164. 300

165. The number of protons

166. Crystalline solid

167. Emf

168. Amorphous

169. Non- crystalline

170. Pauli exclusion principle

171. Ionic

172. permit mechanical clearance

173. Covalent

174. Because air has the lowest relative permeability

175. Metallic

176. directly proportional to

177. Van der Waals bond

178. Atomic packing factor (APF)

179. Madelung constant

180. creepage

181. $\phi i / \phi g$

182. Curie's Law

183. inversely proportional to

184. Curie-Weiss Law

185. Ewing's theory of ferromagnetism

186. length ÷ area

187. Ampere's theorem

188. 1.15 to 1.25

189. Astrionics

190. Flux density in the circuit

191. Aurora

192. air

193. Bridgman effect

194. soft iron

195. 400 V

196. At/Wb

197. 1.257 mWb/m2

198. Using material narrow hysteresis loop

199. hysteresis loss

200. silicon steel