Q1. Which of the following is the example of ideal black body

(a) kajal

(b) black board

(c) a pin hole box

(d) none of these

Q2. Light year is unit of:

(a) time

(b) Speed of light

(c) distance

(d) mass

Q3. Permanent magnet can be made from

(a) cobalt

(b) Aluminium

(c) zinc

(d) lead

Q4. Compton effect is associated with

(a) positive rays

(b) b-rays

(c) x-rays

(d) none of these

Q5. The forward voltage drop across a silicon diode is about

(a) 2.5 V

(b) 3 V

(c) 10 V

(d) 0.7 V

Q6. The leakage current in a crystal diode is due to ……..

(a) minority carriers

(b) majority carriers

(c) junction capacitance

(d) none of the above

Q7. If the doping level of a crystal diode is increased, the breakdown voltage:

(a) remains the same (b) is increased

(c) is decreased (d) none of the above

Q8. When the graph between current through and voltage across a device is a straight line, the device is referred to as

(a) linear (b) active

(c) nonlinear (d) passive

Q9. A zener diode has:

(a) one pn junction

(b) two pn junctions

(c) three pn junctions

(d) none of the above

Q10. A zener diode is used as ……..

(a) an amplifier (b) a voltage regulator

(c) a rectifier (d) a multivibrator

Q11. Bats detect the obstacles in their path by receiving the reflected _____.

(a) infrasonic waves (b) radio waves

(c) electro-magnetic waves (d) ultrasonic waves

Q12. The minimum distance between the source and the reflector, so that an echo is heard is approximately equal to _____.

(a) 10 m (b) 17 m

(c) 34 m (d) 50 m

Q13. When sound travels through air, the air particles _____.

(a) vibrate along the direction of wave propagation

(b) vibrate but not in any fixed direction

(c) vibrate perpendicular to the direction of wave propagation

(d) do not vibrate

Q14. Sound waves do not travel through

(a) solids (b) liquids

(c) gases (d) vacuum

Q15. The frequency which is not audible to the human ear is

(a) 50 Hz (b) 500 Hz

(c) 5000 Hz (d) 50000 Hz

Q16. Which of the following will remain unchanged when a sound wave travels in air or in water?

(a) Amplitude (b) Wavelength

(c) Frequency (d) Speed

Q17. Sound and light waves both

(a) have similar wavelength (b) obey the laws of reflection

(c) travel as longitudinal waves (d) travel through vacuum

Q18. Which of the following quantities is transferred during wave propagation?

(a) Speed (b) Mass

(c) Matter (d) Energy

Q19. The persistence of audible sound due to the successive reflections from the surrounding objects even after the source has stopped to produce that sound is called _____.

(a) reflection (b) echo

(c) reverberation (d) rarefaction

Q20. Vibrations inside the ear are amplified by the three bones namely the _____ in the middle ear.

(a) hammer, anvil and stirrup

(b) hammer, anvil and pinna

(c) hammer, cochlea and stirrup

(d) auditory bone, anvil and stirrup

Q21. One end of a towel dips into a bucket full of water and other end hangs over the bucket. It is found that after some time the towel becomes fully wet. It happens

(a) Because viscosity of eater is high

(b) Because of the capillary action of cotton threads

(c) Because of gravitational force

(d) Because of evaporation of water.

Q22. When there are no external forces, the shape of a liquid drop is determined by

(a) Surface tension of the liquid

(b) Density of liquid

(c) Viscosity of liquid

(d) Temperature of air only

Q23. Choose the wrong statement from the following.

(a) Small droplets of a liquid are spherical due to surface tension

(b) Oil rises through the wick due to capillarity

(c) In drinking the cold drinks through a straw, we use the phenomenon of capillarity

(d) Gum is used to stick two surfaces. In this process we use the property of Adhesion

Q24. When the angle of contact between a solid and a liquid is 90°, then

(a) Cohesive force > Adhesive force

(b) Cohesive force < Adhesive force

(c) Cohesive force = Adhesive force

(d) Cohesive force >> Adhesive force

Q25. The rise of a liquid in a capillary tube does not depend upon

(a) Angle of contact

(b) Density of the liquid

(c) Radius of the capillary tube

(d) Atmospheric pressure

Q26. The pressure just below the meniscus of water

(a) Is greater than just above it (b) Is less than just above it

(c) Is same as just above it (d) Is always equal to atmospheric pressure.

Q27. Meniscus of mercury in capillary is (PMT MP 88)

(a) Concave (b) Convex

(c) Plane (d) Cylindrical

Q28. A freely suspended magnet will always come to rest in the direction

(a) East-North (b) North-West

(c) North-South (d) South-West

Q29. The magnetic flux

(a) is a scalar quantity

(b) is a vector quantity

(c) denotes the amount of the force on a north pole

(d) is the magnetic moment of a bar magnet

Q30. The specific resistance of a wire depends on

(a) its radius (b) Its length

(c) the material of the wire (d) its shape

Q31. The resistance of a conductor is due to

(a) the flow of current in the conductor

(b) the collision of electrons with atoms

(c) The attractive force between electrons and protons

(d) the thermal agitation of electrons

Q32. Sun appears red at sun rise and sunset. This is due to scattering of

(a) longer wavelengths (b) shorter wavelengths

(c) lower frequencies (d) all frequencies

Q33. Tyndall effect is the scattering of the light by

(a) air particles (b) solid particles

(c) liquid particles (d) colloidal particles

Q34. If two bodies of different masses, initially at rest, are acted upon by the same force for the same time, then the both bodies acquire the same:

(a) Velocity (b) Momentum

(c) Acceleration (d) Kinetic energy

Q35. Large transformers, when used for some time, become very hot and are cooled by circulating oil. The heating of the transformer is due to

(a) both the heating effect of current and hysteresis loss

(b) hysteresis loss alone

(c) intense sunlight at noon

(d) the heating effect of current alone

Q36. Rectifiers are used to convert

(a) high voltage to low voltage (b) Direct current to Alternating current

(c) low voltage to high voltage (d) Alternating current to Direct current

Q37. Sound waves in air are

(a) longitudinal (b) polarised

(c) electromagnetic (d) transverse

Q38. When a bar magnet is suspended in a uniform magnetic field, the bar magnet

(a) will move along the direction of the field (b) will move opposite to the direction of the field

(c) will move perpendicular to the field (d) will turn in the field

Q39. A bar magnet kept in a magnetic field

(a) becomes parallel to the field (b) aligns at right to the field

(c) turns by 45° (d) turns by 90°

Q40. Ampere-metre2 is the unit for

(a) magnetic moment (b) pole strength

(c) magnetic field intensity (d) magnetic potential

Q41. Magnetic moment is

(a) a force on a bar magnet (b) a torque on a bar magnet

(c) pole strength of a bar magnet (d) magnetic field produced by a bar magnet

Q42. When a glass is introduced in between the plates of a parallel plate air condenser, its capacitance will

(a) not change (b) decrease

(c) increase (d) tend to zero

Q43. If a negatively charged conductor is brought near a positively charged conductor , its potential

(a) increases (b) decreases

(c) remains the same (d) becomes zero

Q44. The capacitance of a capacitor when the distance between the two plates is doubled

(a) reduce to zero (b) is doubled

(c) remains the same (d) is halved

Q45. An OR gate linked with an invertor is called

(a) NOT gate (b) NOR gate

(c) NAND gate (d) AND gate

Q46. Logical algebra was developed by

(a) Pascal (b) Pythagorous

(c) George Boole (d) Poisson

Q47. The gate which is called an invertor is

(a) OR (b) AND

(c) NOT (d) NAND

Q48. Light waves are

(a) longitudinal (b) transverse

(c) like sound waves (d) like pressure waves

Q49. The light which cannot be completely plane polarized by reflection is

(a) red color (b) green color

(c) white color (d) blue color

Q50. The gate which is called universal gate is

(a) OR gate (b) NOR gate

(c) NOT gate (d) AND gate

Q51. The frequency range of audio signal is from

(a) 20 Hz to 2000 Hz (b) 20 kHz to 20 MHz

(c) 20 Hz to 20 kHz (d) 20 Hz to 20000 kHz

Q52. An electronic oscillator is a device which produces

(a) modulated carrier waves (b) light waves

(c) signal waves (d) carrier waves

Q53. The range of the projectile depends on the square of the initial velocity and?

(a) sine of twice the projection angle θ (b) cosine of twice the project angle θ

(c) cot of twice the projection angle θ (d) sine of thrice the projection angle θ

Q54. Which instrument is used to measure altitudes in aircraft's ?

(a) Audiometer (b) Ammeter

(c) Altimeter (d) Anemometer

Q55. Which instrument is used to measure depth of ocean ?

(a) Galvanometer (b) Fluxmeter

(c) Endoscope (d) Fathometer

Q56. Convection is the process of heat transfer from one location to the next by :

(a) The movement of fluids (b) The movement of kinetic energy

(c) The movement electromagnetic waves (d) None of the above

Q57. Who developed the concept of inertia?

(a) Newton (b) Galileo

(c) Johannes Kepler (d) None of the above

Q58. The motion on a curved path, when one component of velocity is constant and the other is variable is called?

(a) Projectile motion (b) circular motion

(c) vibratory motion (d) spin motion

S59. The angle between centripetal acceleration and tangential acceleration is?

(a) 90° (b) 0°

(c) 45°

(d) 180°

S60. Large angle produces?

(a) curve trajectory

(b) flat trajectory

(c) high trajectory

(d) straight trajectory

Q61. Optical fibres are based on the phenomenon of:

(a) Interference

(b) Dispersion

(c) Diffraction

(d) Total internal Reflection

Q62. Which among the following waves is used for communication by artificial satellites?

(a) Micro waves

(b) Radio waves

(c) A. M.

(d) Frequency of 1016 series

Q63.The rate of transfer of charges through a circuit is called?

(a) Potential Difference

(b) Energy

(c) Resistance

(d) Current

Q64. The power dissipated in a resistance is given by?

(a) I^2R

(b) IV

(c) V^2/R

(d) All of these

Q65. Ohm's law obeyed in?

(a) a metallic conductor

(b) a semi conductor

(c) in all of the above

(d) an electron tube

Q66. When a p.d is applied across a conductor, the electrons experience a force in?

(a) the direction of the electric field.

(b) the direction perpendicular to the established electric field

(c) the direction opposite to the established electric field.

(d) None of above

Q67. All electrical appliances are connected in parallel to each other between the main line and the neutral wire to get?

(a) the same current

(b) different current and the same potential difference

(c) None of these

(d) the same potential difference

Q68. If the wire of uniform area of cross-section is cut into two equal parts, the resistivity of each parts will be?

(a) doubled

(b) Halved

(c) four times

(d) Remain the same

Q69. In a thermocouple?

(a) mechanical energy is converted into heat energy

(b) chemical energy is converted into electrical energy

(c) heat energy is converted into mechanical energy

(d) heat energy is converted into electrical energy.

Q70. Ohm is equivalent to?

(a) ampere / volt

(b) coulomb /volt

(c) volt/ampere

(d) volt /coulomb

Q71. The number of coulombs of charges that passes any section of the conductors in one second is called?

(a) Power dissipation

(b) Electromotive force

(c) Current (d) internal resistance

Q72.The terminal potential difference of a battery is equal to its e.m.f. when its internal resistance is?

(a) very low (b) very high

(c) zero (d) None of these

Q73. If the angle of incidence, θi = 0°, the angle of reflection, θr = _____.

(a) 0° (b) 90°

(c) 180° (d) 45°

Q74. Total internal reflection will occur if the angle of refraction is...

(a) 45° (b) 60°

(c) 90° (d) 99°

Q75. The refractive index of a rarer medium with respect to a denser medium is...

(a) 1 (b) greater than 1

(c) smaller than 1 (d) negative

Q76. The refractive index of a denser medium with respect to a rarer medium is...

(a) 1 (b) greater than 1

(c) smaller than 1 (d) negative

Q77. The image formed by a plane mirror is _____.

(a) real (b) diminished

(c) enlarged (d) laterally inverted

Q78. Absolute refractive index of any medium is always _____.

(a) 1 (b) > 1

(c) < 1 (d) 0

Q79. Which of the following has the highest refractive index?

(a) Glass (b) Water

(c) Pearl (d) Diamond

Q80. No matter how far is the object from the mirror, the image of the object appears erect. The mirror is _____.

(a) concave (b) convex

(c) either concave or convex (d) none of these

Q81. For a plane mirror, magnification (m)= _____

(a) 0 (b) 1

(c) ± 1 (d) ≤ 0

Q82. We can see objects because of which phenomena?

(a) reflection (b) refraction

(c) transmission (d) diffraction

Q83. When a steady current flows through a conductor, the electrons in it move with certain average speed as—

(a) Accelerated speed (b) root mean square speed

(c) drift speed (d) average velocity

Q84. Which of the following is incorrect about the heat produced in a resistor?

(a) It is directly proportional to the square of the current

(b) directly proportional to resistance for a given current

(c) directly proportional to the time for which the current flows through the resistors

(d) None of these

Q85. What is the direction of electric current in an electric circuit?

(a) from positive to positive

(b) from negative to positive terminal

(c) from positive to negative

(d) from negative to negative

Q86. Why is tungsten used exclusively for the filament of an incandescent lamp?

(a) Tungsten can be drawn into thin wires which in turn offer high resistance

(b) Tungsten has a fairly good resistivity

(c) The melting point of tungsten is very high

(d) All of these

Q87. Which of the following material is used for electric wire heater?

(a) Silver (b) lead

(c) Nichrome (d) Copper

Q88. Why ammeter is likely to burn out if you connect it in parallel?

(a) It has high voltage (b) It has high resistance

(c) It has low resistance (d) It has low voltage

Q89. Statement A: light from bathroom bulb gets dimmer for a moment, when geyser is switched on, **Statement B:** Insulators conduct charges, they can be charged easily by friction.

(a) Both the statement A and B are true

(b) statement B is true, A is false

(c) Neither statement A nor statement B is true.

(d) statement A is true, B is false

Q90. What will happen to current passing though a resistor if the potential difference across its ends is doubled and the resistance is halved?

(a) Becomes four times (b) Becomes halved

(c) Remain unchanged (d) Becomes one fourth

Q91. Match the following with correct response.

(1) Electric current	(A) Ampere
(2) Resistance	(B) Volt
(3) Potential difference	(C) Ohm
(4) Resistivity	(D) Ohm-m

(a) 1-A, 2-C, 3-B, 4-D (b) 1-B, 2-D, 3-A, 4-C

(c) 1-D, 2-A, 3-C, 4-B (d) 1-C, 2-B, 3-D, 4-A

Q92. Ohms law is not obeyed by—

(a) Both electrolytes and semiconductor diodes

(b) alloys

(c) semiconductor diodes

(d) electrolytes

Q93. The actual flow of electrons which constitute the current is from:

(a) Negative to positive terminal (b) Positive to negative terminal

(c) Flow at random (d) None of the above

Q94. What is the effect of changing the wire in a circuit from a straight thick wire to a longer (coiled) thick wire?

(a) The bulbs become dimmer

(b) The bulbs become brighter

(c) The bulbs stay at the same level of brightness

(d) none of the above

Q95. Match the following with correct response.

List-I **List-II**

(1) Best conductor (A) Silicon

(2) Standard resistor (B) Silver

(3) Semi- conductor (C) Ebonite

(4) Insulator (D) Constantan

(a) 1-C, 2-B, 3-D, 4-A (b) 1-A, 2-C, 3-B, 4-D

(c) 1-B, 2-D, 3-A, 4-C (d) 1-D, 2-A, 3-C, 4-B

Q96. Statement A: Resistivity increases with decrease in temperature in insulators. ,

Statement B: Resistivity of a conductor increases with increasing temp.

(a) Neither statement A nor statement B is true

(b) Both the statements A and B are true

(c) Statement A is true, B is false

(d) statement A is false, B is true

Q97. Maganin is an alloy of –

A. Copper B. Manganese

C. Nickel D. Platinum

(a) A and C (b) A and B

(c) All of these (d) A, B and C

Q98. Nichrome and copper wires of the same length and same radius are connected in series. Current I is passed through them. Which of the two get heated first?

(a) copper wire (b) Nichrome wire

(c) None of these (d) Both

Q99. What is the SI unit of electrical conductance?

(a) Volt (b) Watt

(c) Siemens (d) Ampere

Q100. Match the following with correct response.

List-I	**List-II**
(1) Bulb filament	(A) Nichrome
(2) Heating element of an electric iron	(B) Potential difference
(3) Super conductors	(C) Zero resistivity
(4) EMF is a	(D) Tungsten

(a) 1-A, 2-C, 3-B, 4-D

(b) 1-B, 2-D, 3-A, 4-C

(c) 1-D, 2-A, 3-C, 4-B

(d) 1-C, 2-B, 3-D, 4-A