

R.S. Model.Sen.Sec. School, Ludhiana
Subject - Physics
Class- XII
Assignment -3 Objective type questions

Multiple Choice Questions

1. Dielectric constant for a metal is

- a) infinite**
- b) zero
- c) one
- d) 10

2. With increase in temperature, resistance of metals:

- a) Decreases
- b) Increases**
- c) First decreases and then increases
- d) Remains constant

3. The property which differentiates two kinds of charges is called

- a) Equality of charge
- b) Polarity of charge**
- c) Fraction of charge
- d) none of the above

4. Which give the information on field strength, direction and nature of the charge

- a) electric current.
- b) electric flux
- c) electric field.**
- d) electric potential

5. Dimensional formula for potential difference is:

- a) $[M^0 L^2 T^{-3} A^{-1}]$
- b) $[M^1 L^2 T^{-3} A^{-1}]$**
- b) $[M^1 L^2 T^{-2} A^{-1}]$
- d) $[M^1 L^1 T^{-2} A^1]$

6. Units of conductance is

- a) ohm
- b) Siemens**
- c) ohm metre
- d) ohm^{-1}

7. S.I unit of electric charge

- a) coulomb**
- b) ampere
- c) Weber
- d) volt

8. The opposition offered by the electrolyte of the cell to the flow of current through itself is known as

- a) External resistance
- b) internal resistance**
- c) Non resistance.
- d) None of the above

9. Angle between equipotential surface and electric field lines is:

- a) Zero
- b) 180°
- c) 90°**
- d) 45°

10. An alternating current can be produced by

- a) choke coil.
- b) dynamo**
- c) Electric motor.
- d) Transformer

11. How is force between two charges affected when dielectric constant of the medium in which they are held increases?

- a) Force decreases**
- b) Force increases
- c) Force becomes infinite
- d) Force becomes zero

12. Resistance of an ideal voltmeter is

- a) zero.
- b) infinite**
- c) high.
- d) low

13. In moving coil galvanometer we use radial magnetic field so that the scale is

- a) logarithmic.
- b) exponential
- c) linear.**
- d) none of these

14. The electric intensity E and current density J are related as:

- a) $E = J/\rho$
- b) $E = J\rho$**
- c) $E = \rho/J$.
- d) $\rho = JE$

15. If a current passed through a spring then the spring will

- a) expand.
- b) compress**
- c) remain the same.
- d) magnetic induction

16. The unit of inductance is

- a) Farad.
- b) Faraday
- c) Henry.**
- d) Tesla

17. Lenz's law is a consequence of

- a) charge.
- b) mass
- c) momentum
- d) energy**

18. The drift velocity does not depend upon:

- a) Cross-section of the wire
- b) Length of wire**
- c) Magnitude of current
- d) Number of free electrons

19. The nature of electromagnetic wave is

- a) **transverse.**
- b) longitudinal
- c) horizontal.
- d) vertical

20. The length and area of cross-section of a metal wire are doubled, then change in its resistance is:

- a) Half
- b) Four times
- c) Doubled.
- d) **No change**

21. Electromagnetic wave travel only through

- a) material medium
- b) vacuum
- c) oscillating electric and magnetic field
- d) **oscillating electric & magnetic field whose direction are perpendicular to each other**

22. The force per unit charge is known as

- a) electric current
- b) electric potential
- c) **electric field.**
- d) electric space

23. Velocity of light in vacuum can be changed by changing

- a) frequency
- b) amplitude
- c) wavelength
- d) **none of these**

24. A charged particle enters at 30° to the magnetic field, its path:

- a) Circular
- b) Elliptical
- c) **helical**
- d) Straight line

25. S.I unit of power of lens

- a) optre.
- b) **dioptre**
- c) coptre.
- d) none of these

26. The best material to be used for emission is

- a) potassium.
- b) sodium
- c) lithium.
- d) **cesium**

27. Velocity of light is maximum in

- a) diamond.
- b) water
- c) glass
- d) **vacuum**

28. Why the oscillations of copper disc in a magnetic field highly damped?

- a) **Due to eddy currents**
- b) Due to resistance
- c) Due to friction
- d) None of these

29. To convert a galvanometer into a voltmeter,

- a) A high resistance is connected in parallel
- b) A low resistance is connected in series
- c) A low resistance is connected in parallel
- d) **A high resistance is connected in series**

30. The emissions of electron is possible by

- a) Photoelectric effect
- b) thermionic emissions
- c) **both.**
- d) none of these

31. A charge q is moving in a magnetic field, then the magnetic force does not depend upon:

- a) Charge
- b) **Mass**
- c) Velocity
- d) Magnetic field

32. What is the frequency of direct current?

- a) 50 Hz
- b) Infinity
- c) **Zero Hz**
- d) None of these

33. The magnitude of saturation Photoelectric current depends upon

- a) frequency
- b) **intensity**
- c) work function
- d) stopping potential

34. Susceptibility is positive and large for a:

- a) Paramagnetic
- b) **Ferromagnetic**
- c) Non-magnetic
- d) Dia-magnetic

35. Resistivity of a wire depends upon

- a) length
- b) area of cross section
- c) shape
- d) **material**

36. For the current in LCR circuit to be maximum:

- a) $X_L = 0$
- b) $X_L = 1/X_C$
- c) **$X_C = X_L$**
- c) $X_C = 0$

37. Which material is used for making coil of resistance box

- a) molybdenum
- b) manganese
- c) **manganin.**
- d) magnesium

38. Which of the following has a minimum wavelength?

- a) X-rays
- c) Ultra-violet Rays
- b) **Gamma-Rays**
- c) Ultra-violet Rays

d)none of the above

39.Electric current is a

- a)Scalar quantity.**
- b) Vector quantity
- c) Some Time scalar and sometime vector
- d) number only

40.The focal length of a plane mirror is:

- a) 0
- b) +1
- c) -1
- d) Infinity**

41.In charging a battery of motor car the following effect of electric current is used

- a) magnetic.
- b) Heating
- c) chemical.**
- d) induction

42.The basic properties of charges are

- a) Additive.
- b) Conservation
- c) Quantisation.
- d)All of these**

43.Tesla is a unit of

- a) electric flux.
- b) magnetic flux
- c) electric field.
- d) magnetic field**

44. The size of the image formed by a convex mirror is;

- a) Diminished**
- b) Same-size
- c) Magnified
- d)none of these

45.A transformer is a device which works on only

- a)dc voltage.
- b)a.c voltage**
- c)a.c & d.c voltage.
- d) none of these

46.When light enters in a glass slab, then wavelength:

- a) Decreases**
- b) Remains constant
- c) increase
- d) Either (b) or (c)

47.In a.c circuit of capacitance the current from potential is

- a) forward.**
- b) backward
- c)both are in same phase
- d) none of these

48.A.c is used in homes because

- a)it is not dangerous
- b)it is easily reproducible
- c)it is cheap

d)it is economical in transmission

49..Which spherical mirror is called a diverging mirror?

- a)Convex.**
- b) Concave
- c)plane
- d)none of these

50.Electromagnetic waves are transverse in nature it is evident by

- a) Polarisation.**
- b) Interference
- c) Reflection.
- d) Diffraction

51.By monochromatic wave, we mean;

- a) A single ray
- b) Wave having a single wavelength**
- c) A single ray of a single colour
- d) Many rays of a single colour

52.Does an electric charge moving in the direction of a magnetic field experience a force?

- a)yes.
- b)No.**
- c) Cannot say.
- d)none of these

53. 1 eV is equal to:

- a) 10^{-13} J
- b) 1.6×10^{-13} J
- c) 1.6×10^{-19} J**
- d) 6.25×10^{-13} J

54.Brilliance of a diamond is due to

- a) Shape.
- b) cutting
- c) reflection
- d) total internal reflection**

55.A convex mirror gives image which are

- a) real & inverted
- b) real & erect
- c) virtual & inverted
- d) virtual & erect**

56. Which photon is more energetic?

- a) Red
- b) Both are equally energetic
- c) Violet**
- d) None of these

57.Critical angle of light passing from glass to air is minimum for:

- a) Red
- b) Yellow
- c) Green
- d) Violet**

58.Magnetic dipole moment is

- a) Scalar quantity.
- b) Vector quantity**

- c) Constant quantity
- d) none of these

59. To draw maximum current from a combination of cells, how should the cell be grouped?

- a) series.
- b) parallel
- c) mixes.
- d) Depends upon relative value of external and internal resistance**

60. Velocity of light is maximum in:

- a) Diamond
- b) Glass
- c) water
- d) Vacuum**

True/False

1. The basic unit of power is watt. **TRUE**
2. The work done in moving a unit positive charge over a closed path in an electric field is finite. **FALSE**
3. In SI, the unit of magnetic dipole moment is Am. **FALSE**
4. Drift velocity depends on the length of wire **FALSE**
5. Rest mass of photons is infinite. **FALSE**
6. Drift velocity is a Scalar quantity. **FALSE**
7. The rate of flow of electric charge through any cross-section of a conductor is known as electric current **TRUE**
8. Sound waves are not electro-magnetic in nature. **TRUE**
9. Unit of conducting is ohm. **FALSE**
10. At the point of incidence, a line drawn at right angles to the surface, separating the two media is called normal. **TRUE**
11. Electrical Inertia is the measure of self inductance. **TRUE**
12. Photoelectric emission is not possible at all frequencies. **TRUE**
13. The total resistance in the series combination is more than the greatest resistance in the circuit. **TRUE**
14. The induced emf is equal to the coefficient of self-inductance is equal to unity, when the rate of change of current is. **TRUE**
15. The focal length of a convex mirror is equal to its radius of curvature. **FALSE**
16. Light travel in same straight line path while passing through different media. **FALSE**
17. When a glass lens is immersed in water, its focal length increases. **TRUE**
18. Photo electric effect is based on the conservation of energy. **TRUE**
19. Kinetic energy of emitted electrons varies with frequency γ of light. **TRUE**
20. Power factor of an A.C. circuit is always less than one. **TRUE**
21. Electromagnetic waves require medium to propagate. **FALSE**
22. Gamma rays have the smallest wavelength. **TRUE**
23. All electromagnetic radiation travel at same speed. **TRUE**
24. If the sizes of charged bodies are very small compared to the distances between them, we treat them as point charge. **TRUE**
25. When the separation between two charges is increased the electric potential energy of the charges increase. **FALSE**