

LONG ANSWER TYPE QUESTIONS

Q.1: Torque acting on an electric dipole in a uniform electric field.

Q.2: Explain principle, construction & working of a Van de Graaff's generator.

Q.3: Gauss's Law - expression for electric field due to infinite line of charge / plane sheet of charge.

Q.4: Capacity and capacitance. Exp for capacitance of P. Plate capacitor.

Q.5: Coulomb's Law in vector form. Hence define unit charge.

Q.6: State Biot Savart's Law. Expression for magnetic field carrying magnetic field at center of circular coil carrying current.

Q.7: Moving coil Galvanometer/cyclotron.

Q.8: Dia, Para, Ferro magnetic substances - their properties.

Q.9: State Ampere circuital law. How is it used to find magnetic field due to a current carrying solenoid.

Q.10: Astronomical Telescope/compound microscope.

Q.11: Lens maker's formula for convex lens.

Q.12: Young's double slit model for

interference.

Q.13: Huygen's PPL. Derivation of laws of reflection /refraction.

Q.14: Derive mirror formula for concave mirror.

SHORT ANSWER TYPE QUESTIONS

Q.1: Drift velocity. Relation between current and drift velocity.

Q.2: Kirchhofs laws. Describe Wheatstone bridge. When is Wheatstone bridge most sensitive balanced.

Q.3: State and explain the principle of potentiometer. How is it used to compare EMF of two cells /to find internal resistance of a cell.

Q.4: Explain how resistivity and resistance of a conductor varies with temperature.

Q.5: Characteristics /uses of electromagnetic waves .Express velocity of E.M waves in two mathematical forms.

Q.6: State and explain Faraday's laws of electromagnetic induction.

Q.7: What are elements of earth's magnetic field .Explain them.

Q.8: What are eddy currents .How are they minimized .Give their advantages /disadvantages.

Q.9: Define self /Mutual induction, their S.I units.

Q.10: Define work function ,stopping potential ,threshold frequency threshold wavelength.

Q.11: Define photoelectric effect. Derive Einstein's photoelectric equation .Hence derive law of photoelectric emission from it(N.P).

Q.12: Derive de-Broglie equation of matter wave .Hence derive it for an electron accelerated through a potential of (V) Volts.

Q.13: Postulates /limitations of Bohr's model of Atom.

Www.KashmirUniversity.Net.In

Q.14: Nuclear fission /Nuclear fusion. One example of each.

Q.15: Define mass defect binding energy. Explain for them .Draw binding energy per nucleon Curve. What conclusion you draw from it.

Q.16: What is α , β , γ , decay. Give four properties α , β , γ of -rays.

Q.17: Total internal reflection ,conditions for TIR.

Q.18: Polaroid and its uses.

Q.19: Brewster's & Malus Law (Numerical Problem).

Q.20: Energy stored in a capacitor.

Q.21: Principles limitations and uses of cyclotron.

Q.22: Conversion of Galvanometer into Ammeter/Voltmeter.

Q.23: Modulation and demodulation. Need of modulation.

Q.24: Why ground waves are not suitable for high frequency.

Q.25: Why sky waves are not used for TV transmission.

Q.26: Why short waves are used for long distance transmission.

Q.27: Define communication. What are elements of basic communication system.

Q.28: Explain half wave rectifier & full wave rectifier?

Www.KashmirUniversity.Net.In

Q.29: Write down logic symbol truth table for OR , AND , NOT Gates.

NUMERICALS:

Q.1: How does the angle of minimum deviation (δ_m) of a glass prism vary , if incident violet light is replaced by red light?

Q.2: Calculate the radius (r) of the loop when a charged particle is projected perpendicular to a Magnetic field intensity (B).

Q.3: Calculate the wavelength of radiation emitted when transition occurs from 1st - excitation state to ground state.

Q.4: Two identical circular coil. P & Q each of radius R , carrying $1A$ & $\sqrt{3}A$ respectively , are placed concentrically & perpendicular to each other lying in XY & YZ planes. Find the magnitude & direction of net magnetic field at centre of coils.

Q.5: A monochromatic light of wave length $589nm$ is incident from air on water surface. If μ for water is 1.33 , find the wavelength, frequency & speed of the refracted light.