Physics - 12th Class Physics Chapter 3 Short Questions Preparation

Q1. What is current sensitive of a galvanometer?

Ans 1: A galvanometer which gives large deflection for the small current is called a sensitive galvanometer,The degree of deflection of galvanometer by unit current passing through it is referred as it sensitivity.It can be made more sensitive.

Q2. If a charge particle moves in a straight line through some region of space,can you say the magnetic field in the region is zero?

Ans 1: The magnitude of a magnetic force on a charge particle is F=qVB sin theta
Magnetic field will be zero due to the following reasons.

1. Magnetic field strength B in the region is zero.
2. Magnetic field is parallel or antiparallel to the direction of motion.

Q3. What is Cathode ray oscilloscope?

Ans 1: Cathode ray oscilloscope is a high speed graph plotting device,It is calledCathode ray oscilloscope because it trace the desired waveform with a beam of electrons which are also called cathode rays.
It mainly consists of

1. Electron gun
2. Vertical deflection plate
3. Horizontal Deflection plates
4. Fluorescent Screen

Q4. Is it possible to orient a current loop in a uniform magnetic field such that the loop will not tend to rotate?Explain

Ans 1: The torque experienced by a current carrying loop when placed in magnetic field is t=NIBA cos alpha.
Clearly when plane off the coil makes and angle of 90 degree will magnetic field, the torque on the coil will be zero.In this condition the coil will not tend to rotate.

Q5. Define stable galvanometer and Ohmmeter.

Ans 1: A galvanometer in which the coil comes to rest quickly after the current passed through it or the current is stopped from flowing through it is called Stable or Dead Beat galvanometer.
Ohmmeter is a useful device for rapid measurement of resistance.it measure resistance in Ohm.

Q6. What is lamp and scale arrangement in galvanometer?

Ans 1: In sensitive galvanometer,the angle of deflection is observed by means of a small mirror attached to the coil along with the lamp and scale.A beam of light directed towards the mirror of galvanometer.After reflection it produce a spot on the screen.The

scale provides the small angle of deflection.

Q7. Write the formula used to convert a galvanometer into voltmeter.Why the resistance of voltmeter should be high?

Ans 1: Galvanometer can be converted into ammeter using this relation/
$R_h=V/I_g-R_g$
A voltmeter is connected in parallel to the resistor to measure potential difference across it.It should have very high resistance so that practically a very little current should pass through it and the current of the circuit should almost remain constant ,so that it might measure the potential difference across a resistor accurately.

Q8. Is it possible to obtain an isolated north pole?Give reason.

Ans 1: No,the source of magnetism of an atom is the electrons,Accepting this view of magnetism it is concluded that it is possible to obtain an isolated north pole,The north pole is merely one side of a current loop.The other side will always be present as south pole and these can not be separated.This is an experimental reality.

Q9. State ampere's law.

Ans 1: Ampere's law states that the sum of the quantity for all path elements into which the complete loop has been divided equal times the total current enclosed by the loop.

Q10. What is B non zero outside a solenoid?

Ans 1: The magnetic field outside a solenoid is not zero.This is only true for infinitely long solenoid.Infinitely long solenoid can not be found in nature,The magnetic field outside a real solenoid is less dense that inside the solenoid and often one is only concerned with the field inside,which is approximately constant.
