Physics - ICS Part 2 Physics Chapter 14 Short Questions Preparation

Q1. 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.

Q2. 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.

Q3. Distinguished between magnetic flux and magnetic flux density.

Ans 1: Magnetic Flux: The number of magnetic lines of force passing through certain elements of area is called magnetic flux.Magnetic flux is a scalar quantity.

Ans 2: Magnetic flux density: The magnetic flux per unit area of a surface perpendicular to magnetic field is called magnetic flux density.

Q4. How can you explain the waveform of various voltage formed in CRO?

Ans 1: We can easily find the instantaneous value and peak value of the voltage with the help of calibration of y axis in volts.the time period can also be determined by using the time calibration of x axis information about the phase difference between two voltage can be obtained by simultaneously their waveforms.

Q5. Two charged particle are projected into a region where there is a magnetic field perpendicular to their velocities.if the charge is deflected in opposite directions,what you can say about them?

Ans 1: When a charged particle is projected in a magnetic field,it will experience the magnetic force.The magnetic force is a deflecting force,Thus if the charged particle are deflected in opposite direction,then particle are oppositely charged i.e. one particle is positively charged and the other is negatively charged.

Q6. Name the main part of CRO.

Ans 1: A filament,cathode grid,anodes,horizontal deflections plates,vertical deflection plates and fluorescent screen.

Q7. 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.

Q8. Write any two use of CRO.

Ans 1:

1. The CRO is used for displaying the waveform of given voltage.
2. Once the waveform is displaying,we can measured the voltage,its frequency and phase.

Q9. Define energy.

Ans 1: The magnetic energy stored in the inductor per unit is referred as energy density.

Q10. 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.
