Physics - ICS Part 2 Physics Chapter 14 Short Questions Preparation

Q1. What should be orientation of a current carrying coil in magnetic field so that the torque acting upon the coil is (a) maximum (b)minimum.

Ans 1: The torque experienced by a current carrying loop when placed in magnetic field is t=NIBA cos alpha.
When plane of the coil makes and angle of 0 degree with magnetic field ,the torque on the coil will be maximum.t=NIBA.
When plane of the coil makes and angle of 90 degree with magnetic field the torque on the coil will be zero or minimum.
t=NIBA cos 90 degree
t=0.

Q2. Why soft iron cylinder is placed inside the coil of galvanometer?

Ans 1: The soft iron cylinder makes the magnetic field stronger and radial such that into whatever position the coil rotates,the magnetic field is always parallel to its plane.

Q3. Briefly give the function of Filament,Cathode,Grid and plates in C.R.O.

Ans 1: Filament: It heats the cathode.
Cathode: It emits the electrons.
Grid:It controls the number of electrons.
Plates: The two sets of plates are used to deflect the beam of electrons along x axis and y axis.

Q4. 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.

Q5. What is the function of grid in cathode ray oscilloscope?

Ans 1: Grid is a negative potential relative to cathode.It controls the number of electrons reaching the screen and thus controls the brightness of spot on the screen.

Q6. Define energy.

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

Q7. What is Time base generator?

Ans 1: A voltage that is applied across x plates is usually provided by a circuit that is build in CRO and is called sweep or time base generator.Its output waveform is a sawtooth voltage of period T.

Q8. On what factors the induced currents due to motional emf depend.

Ans 1: The current can be increased by the following factors :

1. Using a stronger magnetic field
2. Moving the loop faster
3. Replacing the loop with a coil of many turns

Q9. 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.

Q10. Define Tesla and write its formula.

Ans 1: If a magnetic field exerts a force of 1N on 1m length of the conductor placed at right angles to the magnetic field carrying a current of 1A then the strength of magnetic field is said to be one tesla.

$1\ T = 1\ NA^{-1}m^{-1}$
