

Physics - 12th Class Physics Chapter 3 Short Questions Preparation

Q1. Define energy.

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

Q2. How can you use a magnetic field to separate isotopes of chemical elements?

Ans 1: Sinci isotopes of an elements have same charge number but different mass number.As we known that the radius of a charged particle inside a magnetic field is given as, $r = mv/qB$
It shows that the isotopes projected from the same point at right angle to the magnetic field B will follow circular path of different radii due to their different masses,So they can be distinguished easily.

Q3. How can galvanometer be made more sensitive?

Ans 1: Since $I = c/BAN \theta$
A galvanometer can be made more sensitive if c/BAN is made small.
Thus,to increase the sensitivity of galvanometer,c may be decreased or B,A and N may be increased.

Q4. What is digital multimeter?Give its two advantage over AVO meter.

Ans 1: It is a digital version of AVO meter.It is used to measure resistance,voltage and current.

Advantage:

1. The digital values are displayed automatically with decimal point,polarity and the unit for voltage ,current and resistance.
2. These meters are generally easier to use because they eliminate the human error that often occur in reading the dial of an ordinary AVO meter.

Q5. State the right hand palm rule.

Ans 1: If the middle finger of the right hand points in the direction of the magnetic field the thumb in direction of current,the force on the conductor will be normal to the palm towards the reader.

Q6. Why the voltmeter should have the very high resistance?

Ans 1: 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 remains constant,so that it might measure the potential difference across a resistor accurately.

Q7. Distinguished between sensitive and dead beat galvanometers.

Ans 1: A galvanometer which shows large deflection for a small value of unit current is sensitive one whereas a galvanometer in which the coil suddenly comes to rest after the current passed through it or the current is stopped from flowing through it is called dead beat or stable galvanometer.

Q8. 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.
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Q9. Name the main part of CRO.

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

Q10. Two charged particles are projected into a region where there is a magnetic field perpendicular to their velocities. If the particles are deflected in opposite directions, what can you 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 particles are deflected in opposite directions, then the particles are oppositely charged i.e. one particle is positively charged and the other is negatively charged.
