

Physics - 12th Class Physics Chapter 3 Short Questions Preparation

Q1. 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.

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

- Q2. 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.
- Q3. Discuss briefly digital multi meter.
 - **Ans 1:** It is an digital version of an AVO meter, It is used to measure resistance voltage and current. It has become very popular testing device because the digital values are displayed automatically with decimal point, polarity and the unit for voltage current and resistance,
- Q4. How can a current loop be used to determine the pressure of a magnetic field in a given region of space?
 - **Ans 1:** The torque is experienced by a current carrying loop when placed in magnetic field is t=NIBA cos alpha. If the loop is deflected in a given region, then it confirms the presence of magnetic field otherwise not.
- Q5. Define magnetic flux and solenoid.
 - **Ans 1:** The number of magnetic field lines passing through certain elements of area is known as magnetic flux through that surface. A solenoid is a long tightly wound, cylindrical coil of wire, when current passes through such a coil ,it behaves like a bar magnet.
- Q6. Define ammeter and voltmeter.
 - **Ans 1:** An ammeter is an electrical instrument which is used to measure current in amperes. A voltmeter is an electrical device which measure the potential difference in volts between two points.
- Q7. 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.

Q8. 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.

Q9. 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.

Q10. What modification is required to convert a galvanometer into ammeter?

Ans 1: A shunt is connected in parallel with galvanometer to convert it into ammeter.