

Physics - 12th Class Physics Chapter 4 Short Questions Preparation

Q1. What is DC motor?Write its principle.
Ans 1: AD.c motor is a device which converts D.C electrical energy into mechanical energy. The basic principle of electric motor is that a current carrying coil placed in magnetic field experiences a torque which is given by t=NIAB cos theta.
Q2. Can step up transformer increase the power level?
Ans 1: No,a step up transformer can not increase the power level,in actual transformer,due of dissipation of energy in the coil the output power is always less than input power,Therefore a step up transformer can't increase power level.
Q3. Define the SI unit of mutual inductance.
Ans 1: If current is changing at the rate of one ampere per second and the emf induced across the ends of the coil is one volt then inductance is called one Henry.lts SI units are VsA ⁻¹ .
Q4. What is meant by back emf?Write its SI units.
Ans 1: The emf induced across the ends of a coil due to the changing current in the same coil is called self induced emf or back emf.lts SI unit is Volt(V).
Q5. Distinguished between AC generator and transformer.
Ans 1: AC generator: AC generator is a device which produce AC voltage by converting mechanical energy into electrical energy.
Ans 2: Transformer: It is and electrical device which acts to change a given alternating emf into larger or smallar AC voltage.
Q6. Define electromagnetic induction.
Ans 1: When a conductor is moved through a magnetic field, the electric current flow through the circuit, The emf produced in the conductor is called induced emf, and the current generated is called induced current. This phenomena is known as electromagnetic induction.

Ans 1: The phenomena in which the changing current in one coil induces an emd in another coil is called the mutual induction.

Q7. Define mutual induction.

Q8. Name four methods to produce induce emf.

Ans 1: An induce emf is produced in the loop if the magnetic flux through it changes. The methods to produce induced emf are:

- 1. A bar magnet is moved towards the coil.
- 2. By changing the area of the coil in a constant magnetic field.
- 3. A coil of constant area is rotated in a constant magnetic field,
- 4. The coil is placed in the magnetic field of an electromagnet.

Q9. What is back emf in motors?

Ans 1: When to coil motor rotates across the magnetic field by the applied potential difference V,an emf is induced in it. The induced emf is in such a direction that opposes the emf running motor. Due to this reasons, the induced emf is called back emf of the motor. The magnitude of the back emf increase with the speed of motor.

Q10. Name the factor upon which the self inductance depends.

Ans 1: It depends upon induced emd and time rate of change of current in the coil. It also depend upon the number of turns of the coil, its area of cross section and the core material.