

Physics - ICS Part 2 Physics Chapter 15 Short Questions Preparation

Q1. When the primary of a transformer is connected to A.C mains, the current it is very small if the secondary circuit is open. Explain.

Ans 1: If the secondary circuit is open then output power will be zero, Because output power is always slightly smaller than the input power, therefore a very small value of current is being drawn by a primary coil of transformer from AC units,

Q2. Why is split ring is used in DC generators in place of slips rings?

Ans 1: The split rings are two halves of a ring that acts as commutator. When the current in the coil is zero and is about to change direction, the split ring also changes the contacts with the carbon brushes, Therefore the output remains the same direction although the current is not constant magnitude.

Q3. What is electromagnet? Mention two practical example of electromagnet.

Ans 1: When a specimen of iron is placed inside a current carrying solenoid, it becomes an electromagnet. Examples are

1. Transformers
2. Motors

Q4. What happens to the current of a circuit if a load resistance of the circuit is much less than the power transferred?

Ans 1: The greater the load the larger the current is supplied by the generator, When the load resistance of the circuit is much less, small current is supplied by the generator.

Q5. Name four methods to produce induced emf.

Ans 1: An induced 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.

Q6. Differentiate between motor and generator.

Ans 1: Motor: A motor is a device which converts electrical energy into mechanical energy.

Ans 2: Generator: A generator is a device which converts mechanical energy into electrical energy.

Q7. 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 to 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.

Q8. Define mutual induction.

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

Q9. What changes are required to turn the D.C motors into a D.C generators?

Ans 1:

1. In order to convert DC motor into SC generator, the magnetic field must be supplied by the permanent magnet and not by electromagnet.
2. An arrangement to rotate the coil armature should be provided and battery must be removed.

Q10. In a transformer there is no transfer of charge from the primary to the secondary. How is then the power transferred?

Ans 1: The power will be transferred because the two coils of transformer are magnetically linked i.e., the change of flux through one coil is linked with the other coil.
