Explanation: In the case of short-circuit, the resistance of the circuit becomes zero. Hence, the magnitude of the current flowing through the circuit increases quickly.

- 6. State whether the following statements are true or false.
 - (a) An electric motor converts mechanical energy into electrical energy.
 - (b) An electric generator work on the principle of electromagnetic induction.
 - (c) The field at the centre of a long circular coil carrying current will be paraller graight line.
 - (d) A wire with dreen insulation is usually the live with of an electric supply.

Answer:

(a) False

Explanation: An electric motor converts electrical energy into mechanical energy.

(b) True

Explanation: An electric generator produces electricity by rotating a coil in presence of a magnetic field. It works on the principle of electromagnetic induction.

12. Name some devices in which electric motors are used?

Answer: The devices with electric motors are used washing machines, water pumps, electric fans and electric mixers.

13. A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet is (i) pushed into the coil (ii) withdrawn from inside the coil and (iii) held stationary inside the coil?

Answer: A current is induced in a solenoid when a bar magnet is moved relative to it. This is the principle of electromagnetic induction.

- (i) When a bar magnetors busined into a coil, a current is induced for a moment. Therefore, the needle of the galemometer deflects for a short time in a particular direction.
- (ii) When the bar magnet is moved away from the coil, a current is again induced for a moment in opposite direction. Thus, the needle of the galvanometer deflects for a short time in the opposite direction.
- (iii) When a bar magnet remains stationary inside the coil, no current will be induced in the coil. Therefore, galvanometer will show no deflection.
- 14. Two circular coils A and B are placed closed to each other. If the current in the coil A is changed, will some current be induced in the coil B? Give reason.