

Science

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(Chapter 13)(Magnetic Effects of Electric Current)

Class - 10

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Question 1:

Name two safety measures commonly used in electric circuits and appliances.

Answer 1:

Two safety measures are:

- Use of earth wire and proper earthing.
- Use of fuse (now a days fuse wire is replaced by MCB).

Question 2:

An electric oven of 2 kW power rating is operated in a domestic electric circuit (220 V) that has a current rating of 5 A. What result do you expect? Explain.

Answer 2:

Power rating of electric oven $P = 2 \text{ kW} = 2000 \text{ W}$

Supply voltage $V = 220 \text{ V}$

So, the current drawn by electric oven $I = \frac{P}{V} = \frac{2000 \text{ W}}{220 \text{ V}} = 9 \text{ A}$

As the current rating of domestic electric circuit is only 5 A and the oven draws a current 9 A, which is more than the current rating, hence the circuit will be damaged due to overheating/overloading.

Question 3:

What precaution should be taken to avoid the overloading of domestic electric circuits?

Answer 3:

The precautions that should be taken to avoid the overloading of domestic circuits are as follows:

- Too many appliances should not be connected to a single socket.
- Too many appliances should not be used at the same time.
- Faulty appliances should not be connected in the circuit.
- Fuse should be connected in the circuit.

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