



## ELECTRICITY AND CIRCUITS

### EXERCISES

#### Question 1:

Fill in the blanks:

- (a) A device that is used to break an electric circuit is called \_\_\_\_\_.
- (b) An electric cell has \_\_\_\_\_ terminals.

#### Answer 1:

- (a) A device that is used to break an electric circuit is called Switch.
- (b) An electric cell has two terminals.

#### Question 2:

Mark 'True' or 'False' for the following statements:

- (a) Electric current can flow through metals.
- (b) Instead of metal wires, a jute string can be used to make a circuit.
- (c) Electric current can pass through a sheet of thermo Col.

#### Answer 2:

- (a) Electric current can flow through metals. (TRUE)
- (b) Instead of metal wires, a jute string can be used to make a circuit. (FALSE)
- (c) Electric current can pass through a sheet of thermo Col. (FALSE)

#### Question 3:

Explain why the bulb would not glow in the arrangement shown in fig.12.13.



Fig. 12.13

**Answer 3:**

The handle of the screw is made up of insulator, which does not allow current to flow. That is why the bulb is not glowing.

**Question 4:**

Complete the drawing shown in fig 12.14 to indicate where the free ends of the two wires should be joined to make the bulb glow.



**Fig. 12.14**

**Answer 4:**



**Question 5:**

What is the purpose of using an electric switch? Name some electrical gadgets that have switches built into them.

**Answer 5:**

A switch is a device that either breaks the circuit or completes it. The switches used in lighting of electric bulbs and other appliances in homes work on the same principle. In radio, TV, torch, and electric toys have in build switches.

**Question 6:**

Would the bulb glow after completing the circuit shown in fig 12.14 if instead of safety pin we use an eraser?



**Fig. 12.14**

**Answer 6:**

Eraser is insulator, so circuit will not complete. As a result bulb will not glow.

**Question 7:**

Would the bulb glow in the circuit shown in fig. 12.15?



**Fig. 12.15**

**Answer 7:**

Both the wires are connected to only one terminal of the bulb, so current will not flow through the bulb and it would not glow. We should make a correction as follows:



**Question 8:**

Using the “Conduction tester” on an object it was found that the bulb begins to glow. Is the object a conductor or an insulator? Explain.

**Answer 8:**

Since the object allows current to flow and completes the circuit and makes bulb to glow. It means that the object is a conductor of electricity.

**Question 9:**

Why should an electrician use rubber gloves while repairing an electric switch at your home? Explain.

**Answer 9:**

Electricians frequently touch copper wires or they may accidentally come in contact with live wires (wires carrying current). Since human body is good conductor, electricians may get shock. Rubber is an insulator. To prevent themselves from electric shock or flow of current, the electricians use rubber gloves while repairing.

**Question 10:**

The handles of the tools like screwdrivers and pliers used by electricians for repair work usually have a plastic or rubber cover on them. Can you explain why?

**Answer 10:**

Without the help of insulators, the use of electric tools like pliers and screwdrivers will give electric shock to users. Wood and plastics are insulators and help in avoiding direct contact with electric current. When electricians touch these live electric wires with these tools covered with plastic and rubber, current does not flow in their body making safer them from any accident.