

CHAPTER – 9

Electricity and Circuits

Q.1

Fill in the blanks:

- A device that is used to break an electric circuit is called ____.
- An electric cell has _____ terminals.

Answer:

- switch,

Explanation: A switch is a device by which a circuit can be open or closed. b. two. Explanation: There are two terminals in a battery: positive and negative.

Q. 2

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

- Electric current can flow through metals.
- Instead of metal wires, a jute string can be used to make a circuit.
- Electric current can pass through a sheet of Termocole.

Answer:

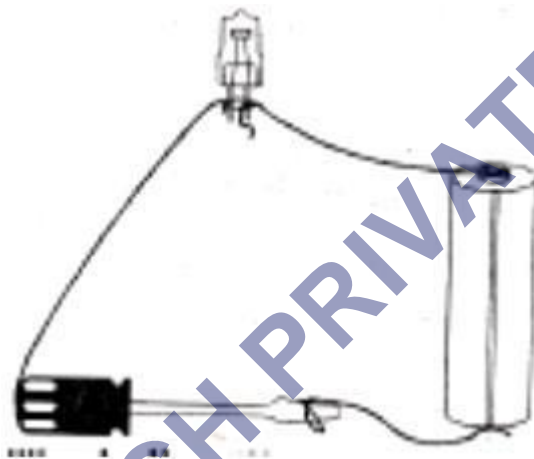
- True, Metals are good conductors of electricity, thus electric current can flow through metals.

b. False, Jute string cannot be used to make a circuit because it is an insulator.

c. False, a sheet of thermocol is an insulator. Thus, electric current cannot pass through it.

Q. 3

Explain why the bulb would not glow in the arrangement shown in the figure.



Answer:

In the given arrangement, shown in the figure, the bulb would not glow because one end of the of the screw driver is made up of metal and the other end is made up of plastic which does not allow the electric current to flow through it. Thus, the circuit is disconnected due to presence of an insulator in between. Hence, bulb will not glow.

Q. 4 Complete the drawing shown in the figure to indicate where the free ends of the two wires should be joined to make the bulb glow.

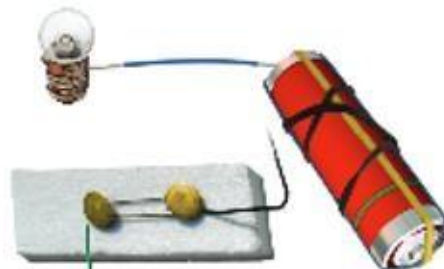
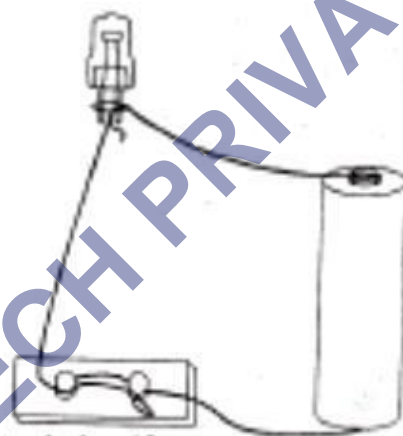


Fig. 12.14

Answer:



In the figure shown above the free ends are joined to make the bulb glow.

Q. 5

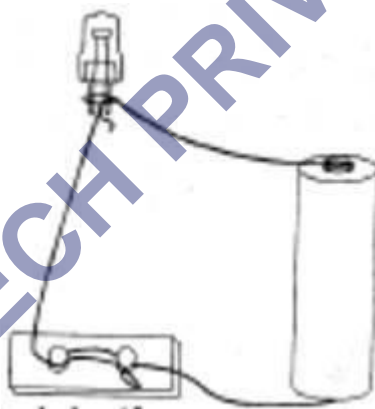
What is the purpose of using an electric switch? Name some electrical gadgets that have switches built into them.

Answer:

Switch is a simple device that is used to either break the electric circuit or to complete it. With the help of a switch, we can use an appliance according to our desire. Electric gadgets that have switches built into them are microwaves, freezers, automatic electric irons, toasters, patty makers.

Q. 6

Would the bulb glow after completing the circuit shown in the figure in the given below if instead of safety pin we use an eraser?



Answer:

If instead of safety pin, an eraser is used, the bulb would not glow because eraser is an insulator which does not allow the electric current to pass. Hence, bulb will not glow.

Q. 7

Would the bulb glow in the circuit shown in the figure?



Answer:

In the given figure, the bulb will not glow the two terminals of the connecting wire of the cell are connected to the same terminal of the bulb.

Q. 8

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

Answer:

The object is a conductor because if the object is good conductor of electricity , then electric current will pass through the conduction tester and the bulb will glow.

Q. 9 Why should an electrician use rubber gloves while repairing an electric switch at your home? Explain.

Answer:

An electrician uses rubber or plastic gloves while repairing an electric switch at home because it is an insulator and saves him from all the electric shocks.

Q.10 The handles of the tools like screwdrivers and pliers used by electricians for repair work usually have plastic or rubber covers on them. Can you explain why?

Answer:

- a. We know that plastic is an insulator and is unable to pass electricity.
- b. To protect the electrician from electric shock while working with a live wire, the handle of the electrician's screwdriver is made of plastic.