

# Chapter 12: Electricity and Circuits

## Multiple Choice Questions

Page no.- 116

1. (a)      2. (d)

## Multiple Choice Questions

Page no.- 120

1. (b)      2. (c)

## EXERCISE

### A. Tick (✓) the correct options.

1. (b)      2. (d)      3. (a)      4. (a)      5. (c)      6. (c)

### B. Look at the figures given alongside and tick (✓) the correct options.

1. (c)      2. (b)      3. (b)

**D. State whether the following statements are true (T) or false (F). Rewrite the false statements correctly.**

1. T
2. F, Correct statement – A fused bulb does not light up, when current passes through its filament.
3. T
4. F, Correct statement – An electric switch is used to open or close an electric circuit.
5. T

**E. Very Short Answer Questions.**

1. The electric current flows from the positive terminal to the negative terminal of a cell.
2. Tungsten is used to make filament of the bulbs.
3. The electrical cells are the source of electricity in an electric torch.
4. Copper is a good conductor of electricity.
5. All electric cells have two terminals—positive (+ve) and negative (–ve).

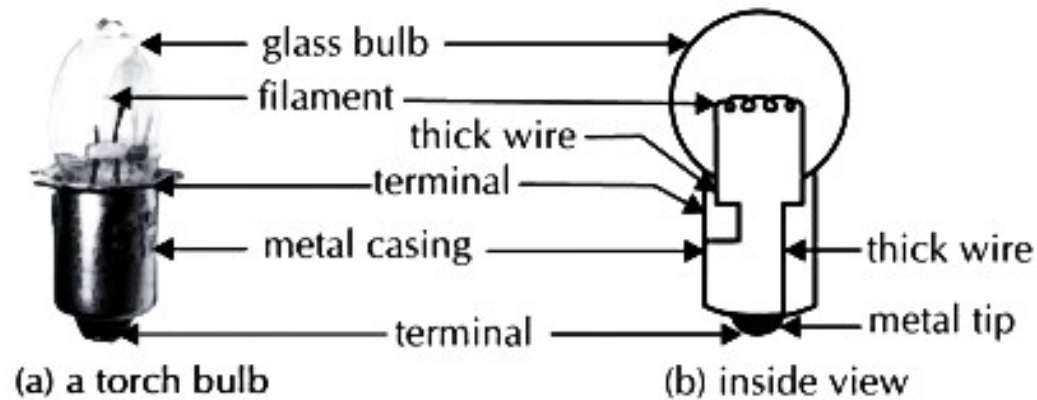
**F. Short Answer Questions.**

1. The circuit in which the path from one terminal of a cell to another terminal is incomplete and electric current does not flow through the circuit is called incomplete or open circuit.
2. An electric switch is a simple device that is used to open or close an electric circuit.
3. (a) Monika stops Sahil because he may get an electric shock by doing so.  
(b) We should care and have concern for others.
4. (a) When the switch is in the 'on' position, the circuit is complete/ closed and the electrical appliance will work.  
(b) When the switch is in the 'off' position, the circuit is incomplete/ open and there is a break in the circuit. So, the electrical appliance will not work.
5. Electricians should wear rubber gloves while working with electricity because rubber is a good insulator and it will protect them from electric shocks.
6. When an electric current is passed through the filament of a bulb, the filament becomes hot and gives light.

7. Preventive measures to avoid electric shocks are as follows:
- (i) Do not touch a hanging wire on the road.
  - (ii) Never touch electrical switches or gadgets when your body is wet.

**G. Long Answer Questions.**

1.



**An electric bulb**

An electric bulb has an outer case made of glass that is fixed on a metallic base. A bulb consists of a tiny, thin wire called a filament. The filament is made up of tungsten and is fixed to two thick wires that give support to it. One of these thick wires is connected to the metal case at the base of the bulb. The other thick wire is connected to the metal tip at the centre of the base. The metal tip at the centre of the base and the metal case at its lower end act as terminals of the bulb. These two terminals of the bulb are fixed in such a way that they do not touch each other. When an electric current is passed through the filament of the bulb, the filament becomes hot and gives light.

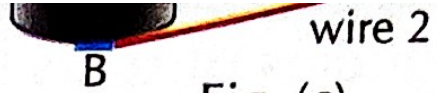


Fig. (c)

**C. Fill in the blanks:**

1. An electric cell is a source of electric energy
2. An electric bulb glows, when current passes through it.
3. Metals are good conductors of electricity.
4. A bulb in which the filament is broken is called fused bulb.
5. Among non-metals, Only graphite is a good conductor of electricity.

**D. State whether the following statements are true (T) or false (F). Rewrite the false statements.**



Ans. 2-a (long)

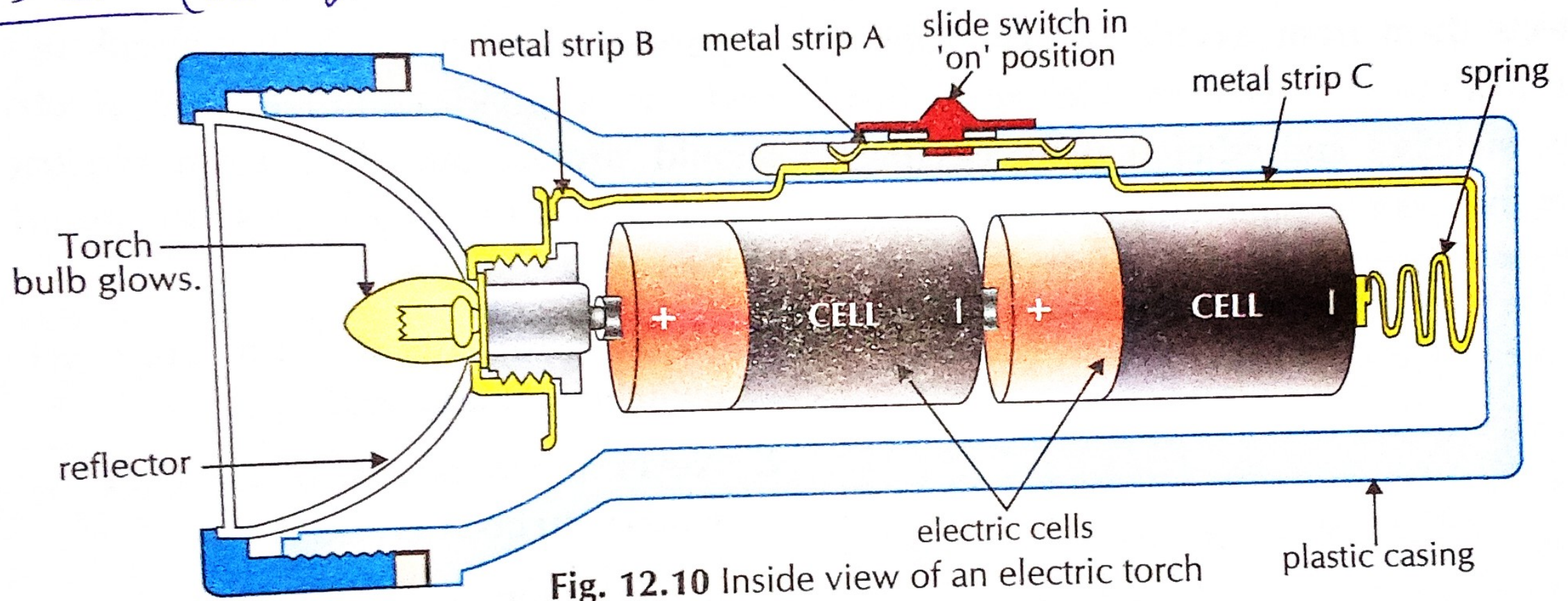


Fig. 12.10 Inside view of an electric torch

plastic casing



Ans - 2-b (long) (underlined sentences)  
**HOW AN ELECTRIC TORCH WORKS**

Examine the interior of a torch. It has two or three cells placed in such a way that the positive end of one touches the negative end of the other cell. The cells are in series. These cells are the source of electric current. They are connected through a switch to a small bulb. The negative terminal of the cell presses against the spring at the base of the torch. The positive terminal of the cell presses against the metal tip at the base of the bulb.

There are three metal strips— metal strip A (a part of the switch), metal strip B (connected with the metal case of the bulb), metal strip C (connected to the spring) (Fig. 12.10). Metal strip B and C are fixed, while metal strip A can be pressed and made to slide.

When the switch is pushed to the 'on' position, the metal strip A is pushed forward so that it touches B and C and the circuit is completed that causes the bulb to glow. When the switch is pushed to the 'off' position, the contact between metal strip A and B is broken and the circuit is incomplete. The current does not flow through the circuit and the bulb does not glow.