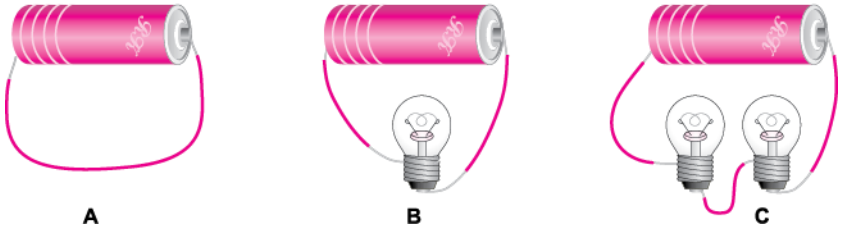
Very Short Answer Questions

Q.1. In which of the following circuits A, B and C given below, the cell will be used up very rapidly? [NCERT Exemplar]



Ans. In circuit A the cell will get used up rapidly.

Q.2. Figure given below shows a bulb with its different parts marked as 1, 2, 3, 4 and 5. Which of them label the terminals of the bulb?
[NCERT Exemplar]

Ans. Labels 3 and 4 mark the terminals of the bulb.

Q.3. What is inside the glass case of a bulb?

Ans. Filament

Q.4. Why does an electric bulb not glow when both the wires are connected to the same terminal of a cell?

Ans. The current flows from one terminal to the other. When both wires are connected to same terminal, current will not flow.

Q.5. Give one difference between a cell and a battery.

Ans. A cell produces electricity by chemical reactions taking place in it whereas battery is made up of two or more cells joined together.

Q.6. Write any two uses of electric cells.

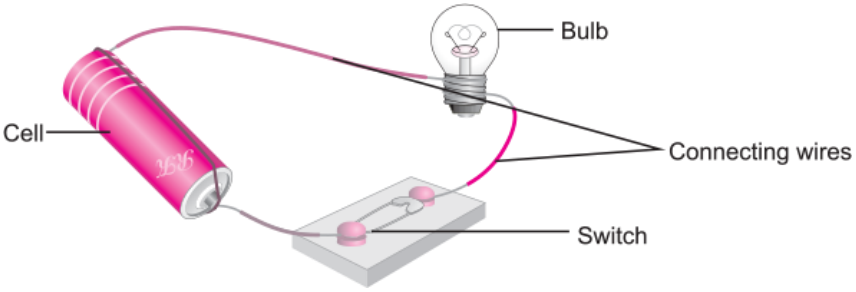
Ans. It is used in alarm clocks and wrist watches.

Short Answer Questions

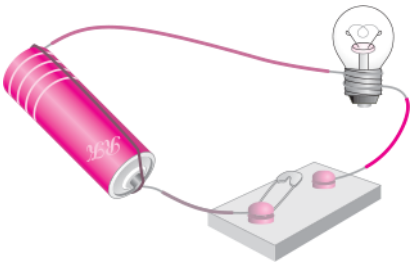
Q.1. You are provided with a bulb, a cell, a switch and some connecting wires. Draw a diagram to show the connections between them to make the bulb glow.

[NCERT Exemplar]

Ans.

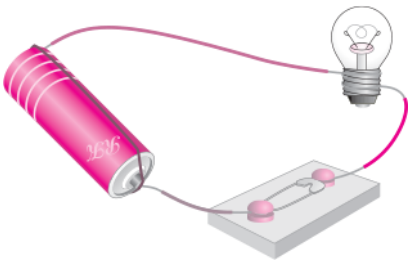


Q.2. Will the bulb glow in the circuit shown below? Explain. [NCERT Exemplar]



Ans. No. The bulb will not glow in this circuit because the switch is open and the circuit is incomplete. Due to this there will be no current flow.

Q.3. An electric bulb is connected to a cell through a switch as shown in figure below. When the switch is brought in 'ON' position, the bulb does not glow. What could be the possible reason/s for it? Mention any two of them.



Ans. The reasons could be

I. the bulb is fused.
II. the cell is a used one.
III. break in connecting wire.
IV. loose connections. (Any two)

Q.4. A torch requires 3 cells. Show the arrangement of the cells, with a diagram, inside the torch so that the bulb glows. [NCERT Exemplar]

Ans.

Q.5. When the chemicals in the electric cell are used up, the electric cell stops producing electricity. The electric cell is then replaced with a new one. In case of rechargeable batteries (such as the type used in mobile phones, camera and inverters), they are used again and again. How? [NCERT Exemplar]

Ans. Rechargeable batteries can be recharged by providing them appropriate current.

Q.6. Paheli connected two bulbs to a cell as shown in the figure given below.

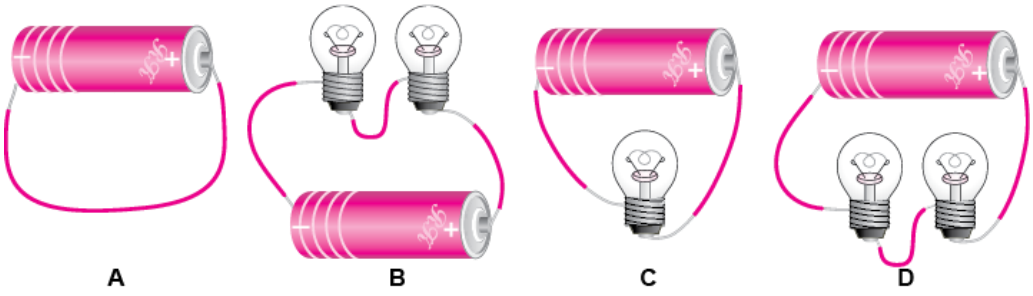
She found that filament of bulb B is broken. Will the bulb A glow in this circuit? Give reason. [NCERT Exemplar]

Ans. No, bulb A will not glow as the circuit is not complete.

Q.7. Why do bulbs have two terminals? [NCERT Exemplar]

Ans. Bulbs have two terminals to connect the filament with the circuit so that the current can pass through it and get accumulated.

Q.8. Which of the following arrangements A, B, C and D given below should not be set up? Explain, why. [NCERT Exemplar]



Ans. Arrangement A is not desirable and should not be set up. This will exhaust the cell very quickly.

Q.9. A fused bulb does not glow. Why? [NCERT Exemplar]

Ans. In a fused bulb the filament is broken and the circuit is incomplete. The current will not flow and the bulb will not glow.

Q.10. Paheli wanted to glow a torch bulb using a cell. She could not get connecting wires, instead, she got two strips of aluminium foil. Will she succeed? Explain, how. [NCERT Exemplar]

Ans. Yes. Aluminium foils can act as connecting wires as it is a good conductor of electricity.

Q.11. What are the essential components of an electric circuit?

Ans. Connecting wires, bulb, switch and cell are the essential components of an electric circuit.

Q.12. Why should you not touch electric appliances and switches with wet hands?

Ans. Water is a good conductor of electricity and current passes very quickly through wet hands. Therefore, it can give us an electric shock.

Q.13. Write two precautions that you must follow while handling electricity.

Ans.

I. Wear rubber gloves or slippers.
II. Never touch switches with wet hands.

Q.14. When a bulb is fused, it does not light up. Explain why?

Ans. When a bulb is fused its filament breaks, which in turn breaks the electric circuit. Thus, current does not pass through it.

Q.15. Why does a cell stop producing electricity after sometime?

Ans. When the chemicals in the electric cell are used up, the electric cell stops producing electricity. Since all the chemicals are used, no chemical reaction takes place which will produce energy.

Q.16. Write any two uses of electricity?

Ans. Two uses of electricity are:

I. To operate pumps that left water from wells or from ground level to the roof top tank.
II. Electricity makes it possible to light our homes, that makes our tasks easier.

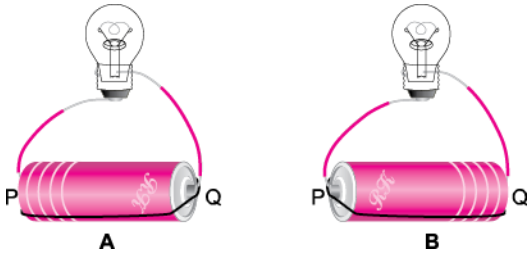
Long Answer Questions

Q.1. Boojho has a cell and a single piece of connecting wire. Without cutting the wire in two, will he be able to make the bulb glow? Explain with the help of a circuit diagram.

[*NCERT Exemplar*]

Ans. Yes, using the arrangement given below he can succeed in getting the bulb glow.

Q.2. Figures A and B, show a bulb connected to a cell in two different ways.



What will be the direction of the current through the bulb in both the cases. (Q to P or P to Q)

Ans. In Fig. (A) Q to P and in Fig. (B) P to Q.

Q.3. A torch is not functioning, though contact points in the torch are in working condition. What can be the possible reasons for this? Mention any three.

[*NCERT Exemplar*]

Ans. The possible reasons could be

i. the bulb may be fused.
ii. the cells may have been used up.
iii. the cells are not placed in the correct order.
iv. the switch is faulty. (*Any three*)

Q.4. Distinguish between the following.

(i) Insulator and Conductor

Ans.

S. No.	Insulator	Conductor
1	Materials which do not allow electric current to pass through them. For example, plastic, rubber, etc.	Materials which allow electric current to pass through them. For example, glass, air, etc.

(ii) Open circuit and Closed circuit

Ans

S. No.	Open circuit	Closed circuit
1 2	Circuit having a gap in its path. The bulb does not light up in this circuit.	Circuit which forms a complete path. The bulb lights up in this circuit.

(iii) Open switch and Closed switch

Ans.

S. No.	Open switch	Closed switch
1 2	When the switch breaks the circuit, it is called open switch. Current does not flow in an open switch.	When the switch completes the circuit, it is called closed switch. Current flows in a closed switch.

HOTS (Higher Order Thinking Skills)

Q.1. How can you explain that the human body is a good conductor of electricity?

Ans. If we stand barefoot on the ground and touch an electric wire, we will get an electric shock. This is because human body is a good conductor of electricity. Without slippers, current can easily pass through.

Q.2. Why should we take care while handling electricity?

Ans. Carelessness in handling electricity and electric devices can cause servers injuries and sometimes even death, so we should take proper care while handling electricity.