

CHAPTER - 1ELECTRICITY: CIRCUIT AND THEIR COMPONENTS

I. Very short answer type (2 marks):-

5. Why does an electric bulb does not glow even it is connected to the cell?

Ans: An electric bulb may not glow even when connected to a cell if the cell is drained or the filament of the bulb is broken.

7. What is the difference between conductor and insulator?

	CONDUCTORS	INSULATORS
Ans:	Conductors are materials that allow electricity to pass through it.	Insulators are materials that does not allow electricity to pass through it.
	Electrons move freely within the conductor.	Electrons do not move freely within the insulator.
	Examples: Silver, iron	Examples: Paper, wood.

11. State the property of a conducting wire is utilised in making electric fuse.

Ans: The conducting wire used in an electric fuse has a low melting point. It melts when excessive current passes through it, thereby breaking the circuit and preventing damage to the appliances.

ii Short answer type (2 marks):

3. Why should we wear rubber slippers or shoes while handling electrical appliances?

Ans: Wearing rubber slippers or shoes while handling electrical appliances is a safety precaution to prevent electric shock. Rubber is an insulator it does not conduct electricity. By wearing rubber slippers, we reduce the risk of electricity passing through your body in case of a fault in the electrical system.

5. What would happen if "CAUTION" mark is not displayed at outside the electric sub-stations and on high powered electrical devices?

Ans: Caution marks warn people about the danger of high voltage electricity. If they are not displayed outside electric substations and on high-powered electrical devices, people may unknowingly approach or touch them and suffer serious electric shocks, injuries or accidents. Hence caution mark is essential for safety.

14. Why are electric wires covered with plastics?

Ans: Electric wires are covered with plastic because plastic is an insulator and does not allow electric current to pass through it. This prevents electric shocks and ensures safe use of electrical appliances.

15. Can the electric wires at home be covered with aluminium foil instead of plastic?

Ans: No, electric wires at home cannot be covered with aluminium foil instead of plastic. Aluminium is a good conductor of electricity, so electric current can pass through it. If wires are covered aluminium foil, it may cause electric shocks and short circuits. Plastic is used because it is an insulator and provides safety.

11. Long answer type (5 marks):-

2. State the reason due to which a bulb may get fused.

Ans: A bulb may get fused due to the breaking of its filament.

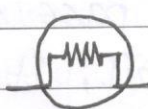
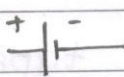
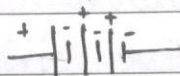
The filament is a thin wire made of tungsten that glows when electric current passes through it.

When the bulb is used for a long time or when excessive current flows through it, the filament becomes very hot and may melt or break.

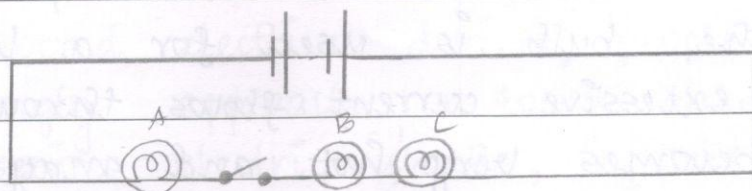
Once the filament breaks the electric circuit inside the bulb becomes incomplete. As a result, electric current cannot pass through the bulb and it stops glowing. Such a bulb is said to be fused.

7. Draw in your notebook the symbols to represent the following components of electrical circuits: connecting wires, switch in the 'OFF' position, bulb, cell, switch in the 'ON' position, and battery.

Ans:

COMPONENTS	SYMBOLS
Connecting wires	—————
Switch in 'OFF' position	—○—○—
Bulb	
Switch in 'ON' position	—○—○—
Cell	
Battery	

8. In the circuit shown in fig,



(i) Would any of the bulb glow when the switch is in the 'OFF' position?

Ans: No, the bulbs will not glow when the switch is in the OFF position, this is because the circuit is incomplete, meaning no current flows through it.

(ii) What will be the order in which the bulbs A, B and C will glow when the switch is moved to the 'ON' position?

Ans: When the switch is moved to the 'ON' position, all bulbs A, B, C will glow simultaneously. This occurs because they are all connected to the same battery and switch.