

Board – CBSE

Class – 6<sup>th</sup>

Topic – Electricity and Circuits

1. Fill in the blanks:

(a) A device that is used to break an electric circuit is called\_\_\_\_\_

(b) An electric cell has\_\_\_\_\_

Ans: (a) switch

(b) two

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.

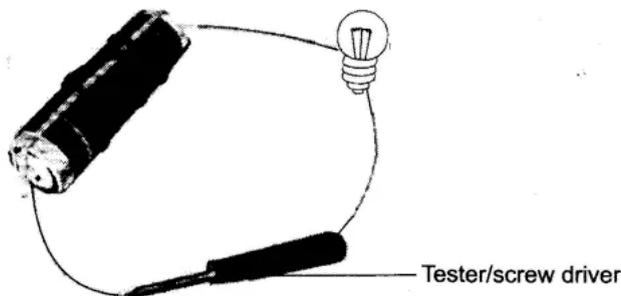
(c) Electric current can pass through a sheet of thermocol.

Ans: (a) True

(b) False

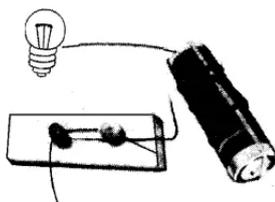
(c) False.

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

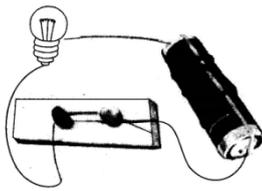


Ans: The bulb would not glow in the arrangement shown in the figure because the one end of the tester/screwdriver is made up of plastic which does not allow the electric current to flow through it.

4. Complete the drawing shown in Fig. 12.9 to indicate where the free ends of the two wires should be joined to make the bulb glow.



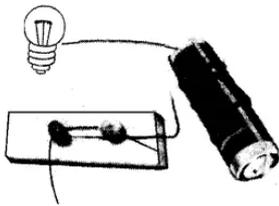
Ans:



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

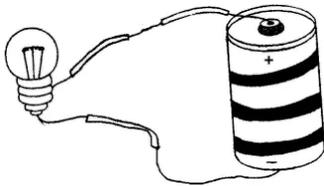
Ans: Electric switch is used to make electric circuit open or closed for a particular appliance, and hence with the help of a switch we can use an appliance according

6. Would the bulb glow after completing the circuit shown in Fig if, instead of a safety pin, we use an eraser?



Ans: No, since the eraser is an insulator, it does not allow the current to pass. Hence the bulb will not glow.

7. Would the bulb glow in the circuit shown in Fig.



Ans: Yes, the electric circuit is closed, so the bulb will glow.

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

Ans: Yes, if the object is a good conductor of electricity, the current will pass through the conduction tester, and the bulb will glow. Hence the object will be a conductor of electricity.

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

Ans: Our body is a good conductor of electricity, and rubber is an insulator. During repairing work, if the body comes in contact with the current carrying wire, there will be no accident as rubber does not allow the passage of current through it. Hence electrician uses rubber gloves while repairing an electric switch.

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?

Ans: Plastic or rubber is an insulator that does not allow an electric current to pass through it. The handles of the tools like screwdrivers and pliers used by electricians for repair have a covering of plastic or rubber so that electric current may not pass through these tools to the body of the electrician to harm him.

## VERY SHORT ANSWER TYPE QUESTIONS

11. What is the direction of the flow of current in a dry cell?

Ans: The current flows in a closed circuit from +ve to -ve terminal of the cell.

12. Name the +ve terminal of the dry cell.

Ans: Carbon rod with a metal cap on it.

13. Name the -ve terminal of a dry cell.

Ans: Zinc metal plate.

14. What is a dry cell?

Ans: It is a device that converts chemical energy into electrical energy.

15. What is a solar cell?

Ans: A device that converts solar energy into electrical energy.

16. What is an open circuit?

Ans: An electric circuit in which electrical contact at any point is broken is called an open circuit.

17. Write one use of insulators.

Ans: Insulators are used in making switchboards, handles of testers, screwdrivers.

18. What is the name of thin wire in the electric bulb?

Ans: Filament.

## SHORT ANSWER TYPE QUESTIONS

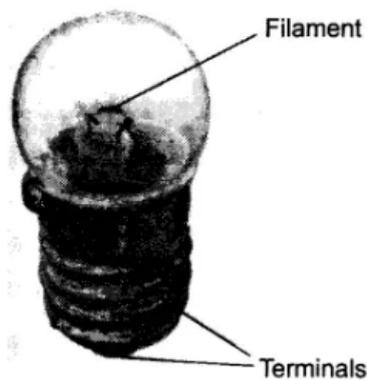
19. Mention two advantages of a dry cell.

Ans: 1. It converts chemical energy into electrical energy.

2. It is light and small in size.

20. Draw a diagram showing the two terminals of a bulb.

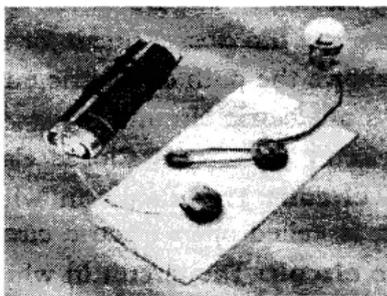
Ans:



**Fig.** Torch bulb

21. Draw the circuit diagram for operating a bulb with the help of a dry cell.

Ans:



**Fig.** An electric circuit with a switch

22. Define conductors and insulators. Give one example of each.

Ans: A conductor is that which easily allows the passage of current through it. Example: Aluminium or any metal.

An insulator is that which does not allow the passage of current through it. Example: Rubber.

23. Identify conductors and insulators from the following: Eraser, paper, matchstick, copper wire, pencil lead, polythene

Ans: Conductors: Copper wire, pencil lead.

Insulator: Eraser, paper, matchstick, polythene.

24. Name the scientist who invented the electric cell and the scientist who invented the electric bulb.

Ans: Electric cell: Alessandro Volta.

Electric bulb: Thomas Alva Edison.

25. Give one activity to prove that air is an insulator.

Ans: Take an electric circuit, keep the terminals unconnected in the air. The bulb does not glow, as air is an insulator and does not allow the current to flow through it.

26. In an electric circuit, when the switch is on, and the current flows through it, why do the wire, switches, bulbs or devices become hot?

Ans: This is because electric energy changes into heat energy.

27. The headlights of a car have reflectors behind the bulb. What is the function of reflectors?

Ans: The reflector helps in reflecting the light into a focussed area.

28. If you touch an electric wire carrying current, you get a shock, but if on the same wire the birds sit, they do not get any shock/current. Explain why?

Ans: When we hold the wire carrying current, then the circuit is closed. The current flows from our body and enters the earth, but the birds sitting on the same wire do not get any current as the circuit is not complete. If the bird touches the earth wire, it will also die due to electric shock.

## LONG ANSWER TYPE QUESTIONS

29. (1) What is an electric circuit?

(2) How many types of an electric circuits are there? Define them.

(3) Draw a diagram to show the closed circuit for switch, bulb and dry cell.

Ans: (1) The diagram that shows the path of the electric current is called an electric circuit.

(2) There are two types of the electric circuit:

(a) Open electric circuit

(b) Closed electric circuit

(a) Open electric circuit: The circuit in which electrical contact at any point is broken is called open electric circuit.

(b) Closed electric circuit: The circuit in which electric current flows from one terminal of a cell or battery to the other is called a closed circuit.

