

1. Assertion: The bulb does not glow when the circuit contains a material like rubber.
Reason: Rubber is an insulator and does not allow electric current to pass through it.
2. Assertion: A fuse is connected in the live wire of the circuit.
Reason: A fuse protects the appliances by melting and breaking the circuit when excessive current flows.
3. Assertion: An LED glows even with a very small current.
Reason: LED bulbs have very high filament resistance which produces more heat.
4. Assertion: All conductors of electricity also show magnetic effects when current flows through them.
Reason: Electric current flowing through a conductor produces a magnetic field around it.
5. Assertion: Copper and aluminium are commonly used as connecting wires.
Reason: These metals have low electrical resistance and are good conductors of heat.
6. Assertion: Electric bells work on thermal effect of electric current.
Reason: The coil in an electric bell behaves like an electromagnet when current flows through it.
7. Why is tungsten used in filament of bulbs even though it is a poor conductor compared to metals like copper?
8. A student found that the compass needle placed near a wire deflects only when the switch is ON. What conclusion can be drawn from this observation?
9. A circuit consists of a battery, a switch, a bulb and a fuse. During a fault, the fuse wire melts. Explain why this is important for safety and what would happen if the fuse was not present.
10. Draw a circuit diagram connecting an electromagnet. Explain how you can determine the north and south pole in an electromagnet.