Class 6...Science
Chapter – 14 - Electricity & Circuit

II. Very Short answer type questions

A. Give two examples of places where the following could be used.

Q.1 A dry cell:

a) In a wall clock b) In a TV remote control

Q.2 A secondary cell:

a) In mobile phone batteries b) In inverter systems

Q.3 Electric switch:

a) In room light control b) In a fan regulator

Q.4 Conductors:

a) In electric wiring (e.g., copper wires) b) In metal bodies of appliances for grounding

Q.5 Insulators:

a) Plastic coating on electric wires b) Handle of electric irons or screwdrivers

B. Explain the following terms:

Q.1 Electrical appliances

Ans: Devices that work using electricity to perform a specific function are called electrical appliances. Examples include fans, refrigerators, electric kettles, and irons.

Q.2 A source of electric current

Ans: A device or system that provides a continuous flow of electrons (electricity) is called a source of electric current. Examples: dry cell, battery, generator.

Q.3 Electrical circuit

Ans: A complete path through which electric current can flow is called an electrical circuit. It includes components like a power source, wires, switches, and electrical appliances.

Q.4 An electric switch

Ans: A device used to open or close an electric circuit is called an electric switch. It helps in controlling the flow of current in a circuit.

Q.5 Insulator

Ans: A material that does not allow electric current to pass through it is called an insulator. Examples: rubber, plastic, glass.

III. Short Answer Type Questions

Q.1 Name a source that uses chemical reactions to produce electric current.

Ans: Dry cell

Q.2 Name an appliance that uses electric current to produce light.

Ans: Electric bulb

Q.3 Name a kind of cell that uses sunlight to produce electric current.

Ans: Solar cell

Q.4 Name a device that is used to make or break an electrical circuit.

Ans: Electric switch

Q.5 What name is given to cells that cannot be recharged?

Ans: Primary cells

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IV. Long Answer Type Questions

Q.1 Draw a simple electrical circuit and label the parts. Explain how we can connect a bulb in a circuit and how it can show us if an electric current is flowing in the circuit or not.

Ans: To create a simple circuit:

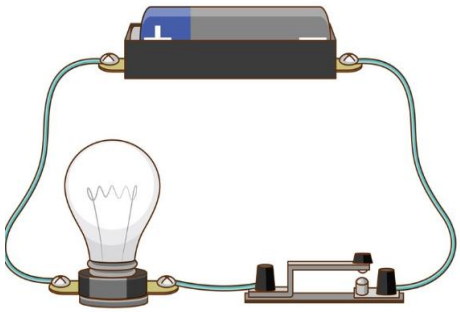
a) Connect the positive terminal of the cell to one side of the bulb using a wire.

b) Connect the other terminal of the bulb to a switch.

c) Connect the switch back to the negative terminal of the cell.

If the switch is closed (ON), the bulb glows. This means electric current is flowing. If the switch is open (OFF), the bulb does not glow, showing no current flow.

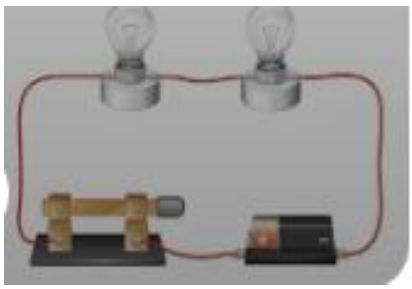
Diagram:



Q.2 Using a bulb, cell and key, draw diagrams and explain the flow of electric current in an 'open circuit' and in a 'closed circuit'.

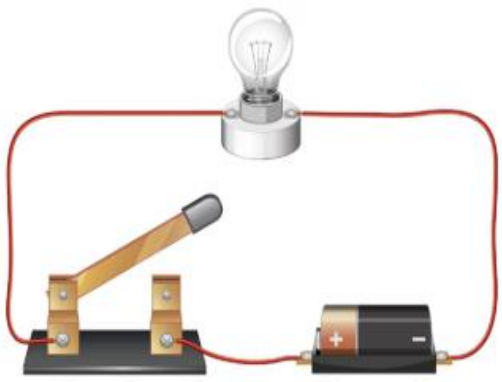
Ans: Closed Circuit (Bulb Glows)

In a closed circuit, the key or switch is in the closed position. This means the circuit is complete, and electric current flows from the positive terminal of the cell, through the key and the bulb, and returns to the negative terminal. As a result, the bulb receives current and glows.



Open Circuit (Bulb Does Not Glow)

In an open circuit, the key or switch is in the open position. This breaks the path of the current, so the electric current cannot flow through the circuit. Since the bulb does not receive any current, it does not glow.



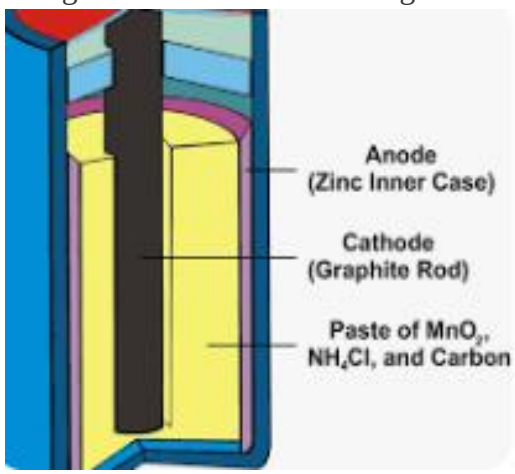
Q.3 What is a dry cell? What is inside it? Why is it useful to us?

Ans: A dry cell is a type of electric cell that provides a small amount of electricity for use in portable devices. It is called "dry" because it does not contain a free-flowing liquid; instead, it uses a moist paste as the electrolyte.

What is Inside a Dry Cell?

A dry cell consists of:

a) A zinc container (which acts as the negative terminal)
b) A carbon rod in the center (positive terminal)
c) A paste of ammonium chloride and zinc chloride as the electrolyte
d) Manganese dioxide surrounding the carbon rod, which acts as a depolarizer



A dry cell is useful because:

a) It is small, portable, and easy to use
b) It does not spill, unlike liquid cells
c) It can be used in everyday devices like wall clocks, remote controls, torches, and toys
d) Dry cells provide a convenient and safe source of electricity for many household and electronic items.

Q.4 How does an electric torch work? Explain with the help of a diagram.

Ans: An electric torch (also called a flashlight) is a portable device that produces light using electric current. It contains one or more dry cells (batteries), a bulb, a switch, and metal contacts or wires to form an electric circuit.

Working of an Electric Torch:

a) Battery (Dry Cell) provides the electrical energy.
b) Wires or metal strips connect the positive and negative terminals of the battery to the bulb.
c) Switch is used to open or close the circuit.
d) Bulb glows when electric current flows through it.

Imp: -

1. When the **switch is ON**, the circuit becomes **closed**, allowing current to flow from the battery to the bulb.
2. The bulb receives current and produces **light**.
3. When the **switch is OFF**, the circuit becomes **open**, so **no current flows**, and the bulb does not glow.

Q.5 One class of materials allow the flow of electric current and some do not. What are these different classes of material called?

Ans: The different classes of materials based on their ability to conduct electric current are called:

a) Conductors b) Insulators

a) Conductors are materials that allow electric current to flow through them easily.
These materials have free electrons that move and carry current.
Examples: Copper, aluminium, iron, graphite.

b) Insulators are materials that do not allow electric current to pass through them.
They resist the flow of electricity and are used for safety.
Examples: Rubber, plastic, wood, glass.