3 Electricity Circuits and their Components

Chapter Notes:

What is Electricity?

Electricity is a form of energy used to power devices like bulbs, fans, TVs, etc.
It flows through a closed circuit and requires a source (battery or cell).

Electric Cell

A source of electricity.
Has two terminals: positive (+) and negative (−).
Chemical energy inside it gets converted to electrical energy.

Battery

A group of two or more cells connected together.
Used in devices needing more power.

Electric Circuit

A complete path for current to flow.
Includes a cell, conducting wire, and an electrical component (like a bulb).
Must be closed for electricity to flow.

Electric Bulb

Glows when electricity passes through.
Contains a filament (usually tungsten) that heats up and emits light.
Glass cover prevents the filament from being damaged.

Switch

A device that opens or closes the circuit.
Closed switch → Circuit is complete → Current flows.
Open switch → Circuit is broken → No current flows.

Conductors and Insulators

Conductors: Allow electric current to pass (e.g., copper, aluminum).
Insulators: Do not allow current (e.g., rubber, plastic).

Short Answer Questions

Q1. What is an electric circuit?

Ans: _____

Q2. Name two good conductors and two insulators.

Ans: _____

Q3. What is the function of a switch in a circuit?

Ans: _____

Q4. Why does the filament of a bulb glow?

Ans: _____

Q5. What is a battery?

Ans: _____

Long Answer Questions

Q1. Explain the working of an electric bulb.

Ans: _____

_____

_____

Q2. Differentiate between conductors and insulators.

Ans: _____

_____

_____

Q3. Draw a labeled diagram of an electric circuit with a bulb and a switch.

Fill in the Blanks

1. An electric bulb has a thin wire called a _____.
2. A switch is used to _____ a circuit.
3. Copper is a good _____ of electricity.
4. A circuit must be _____ for the current to flow.
5. A battery is a combination of two or more _____.

True or False

1. An open circuit allows electricity to flow.
2. Rubber is a good conductor.
3. A bulb glows only in a closed circuit.
4. A battery consists of a single cell.
5. Electricity is a form of energy.

Multiple Choice Questions (MCQs)

1. Which of these is a conductor?
a) Wood b) Rubber c) Copper d) Plastic

2. What is the purpose of a switch?
a) Store electricity b) Break or complete the circuit
c) Generate electricity d) Heat the wires

3. In which condition does a bulb glow?
a) When the switch is open b) When the circuit is open
c) When the circuit is closed d) When there is no battery

4. The wire inside a bulb that glows is called:
a) Conductor b) Filament
c) Fuse d) Switch

5. A combination of cells is called:
a) Fuse b) Wire
c) Switch d) Battery

Answers

Short Answer Questions

Ans 1: An electric circuit is a complete path through which electric current flows.

Ans 2: Conductors: Copper, Aluminum. Insulators: Plastic, Wood.

Ans 3: A switch opens or closes a circuit to start or stop the flow of electricity.

Ans 4: Because it gets heated when electricity passes through it and emits light.

Ans 5: A battery is a combination of two or more electric cells.

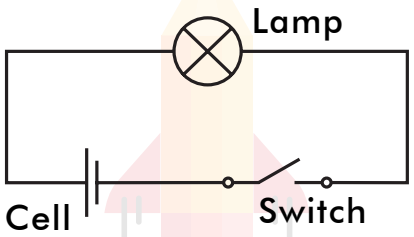
Long Answer Questions

Ans 1: An electric bulb works when current passes through its filament, heating it up. The filament becomes hot enough to glow and emit light. The bulb's glass covering protects the filament from air.

Ans 2:

Conductors	Insulators
Allow current to pass	Do not allow current
Example: Copper	Example: Plastic

Q3. Draw a labeled diagram of an electric circuit with a bulb and a switch.



Fill in the Blanks

1. filament.
2. open or close
3. conductor
4. closed
5. cells

True or False

1. False
2. False
3. True
4. False
5. True

Multiple Choice Questions (MCQs)

1. Answer: c) Copper
2. Answer: b) Break or complete the circuit
3. Answer: c) When the circuit is closed
4. Answer: b) Filament
5. Answer: d) Battery