



LITTERA PUBLIC SCHOOL

CLASS 6

CHAPTER 12

SCIENCE

ELECTRICITY AND CIRCUITS

Key words

1. **Electric circuit:** the closed path of flow of electric current.
2. **Filament:** a piece of tungsten wire inside a bulb which glows when an electric current passes through it.
3. **Switch:** a device that closes or opens a circuit by allowing or preventing flow of current.
4. **Conductors:** the materials that allow the flow of electric current through them.
5. **Insulators:** the materials that do not allow the flow of electric current through them.
6. **Battery:** a combination of two or more cells.
7. **Open circuit:** the circuit in which no current flows.

8. **Closed circuit:** the circuit in which the current flows.
9. **Bulb:** a device which converts electrical energy into light energy.

Very short answer questions

1. **What is an electric circuit?**

Ans. Electric circuit is the path through which the current flows.

2. **Name a device which is used to open or closed a circuit.**

Ans. Switch

3. **What kind of cell is used in a wrist watch?**

Ans. Button cells are used in wrist watches.

4. **State whether the following are conductors or insulators.**

- a. Wood – insulator
- b. Distilled water – insulator
- c. Copper – conductor
- d. Plastic – insulator
- e. Aqueous solution – conductor
- f. Silver – conductor
- g. Brass – conductor

h. Water – conductor

5. What are conductors? Give two examples.

Ans. The materials that allow the electric current to flow through them are called conductors. Example – copper, silver, iron etc.

6. Name any four appliances that work on electricity.

Ans. Four appliances that work on electricity are:- electric bulb, electric iron, electric bell, and toaster

Short answer questions

1. Why is a complete path required for the current to flow?

Ans. Closed path is required for the flow of current because if the path is not closed, it means that between the two ends air is present. Since, air is an insulator, it will not allow the flow of charges through it and the current will not flow.

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

Ans. An electric switch helps in making as well as breaking the circuit without removing the connection. It also saves electricity and make the use of appliances easier.

Some electric gadgets are: Television, Washing Machine, mixer grinder etc.

3. What is switch? Explain the working of a switch with the help of diagrams.

Ans. A switch is a device which controls the ON - OFF mechanism of any electric circuit. A switch has a strip that acts as a bridge for the electricity to flow. A switch works by opening and closing a gap in an electric circuit. When the switch is in the off position, a gap opens up in the circuit due to which electricity stops flowing in the circuit and hence the electrical appliance stops working. On the other hand, when the switch is in on position the gap in the electric circuit is closed and a complete circuit is made. Due to the complete circuit, electricity starts flowing

in the circuit and electrical appliance will start working.

4. Why do electricians wear rubber hand gloves while working with electricity?

Ans. As rubber is a bad conductor of electricity so it does not allow the electric current to pass through it. Thus, the rubber gloves will save the electrician from any electric shock while repairing an electric switch or appliance.

5. What does each of the following do in an electric circuit?

- a. Bulb – changes electrical energy into light energy.
- b. Cell – source of electric current.
- c. Wires – connects all the components of circuit.
- d. Switch – controls on and off in the circuit.

6. What are the advantages of a dry cell?

Ans. Advantages of a dry cell are:-

- a. Dry cells can be easily transported from one place to another.

- b. Dry cells are very light in weight and small in size.
- c. Dry cells can be easily stored in houses.

Long answer questions

1. What happens when the switch is in the

a. On position

Ans. When switch is in on position the gap in the electric circuit is closed and a complete circuit is made. Due to the complete circuit, electricity starts flowing in the circuit and electrical appliance will start working.

b. Off position

Ans. When the switch is in the off position, a gap opens up in the circuit due to which electricity stops flowing in the circuit and hence the electrical appliance stops working.

2. Distinguish between conductors and insulators, giving examples of each.

Ans.

Conductor	Insulator
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It allows electric current to through.	It does not allow electric current to pass through
Example – iron, copper, silver etc.	Example – rubber, plastic, wood etc.

3. What preventive measures should we follow to avoid an electric shock?

Ans.

- i. Do not touch switches or any other electrical appliances with wet hands.
- ii. While repairing electrical appliances check that it is not connected to the mains.
- iii. Where rubber gloves and rubber slippers while handling electrical appliances.

4. How does an electric torch work?

Ans. A torch consists of a simple electric circuit in which two or more cells are connected to a torch bulb through a sliding switch. When the torch is needed to provide light, the sliding switch is closed by pushing it forward so that the circuit is completed and the bulb of the torch lights up. When the torch is not needed, the sliding switch is opened by pushing it

backwards so that the circuit breaks and the bulb is turned off.

5. What name is given to the electric circuit of the following:-

- a. In which there is a gap – open circuit
- b. In which there is no gap – closed circuit