

NCERT SOLUTIONS

CLASS-VI SCIENCE

CHAPTER-12

ELECTRICITY AND CIRCUITS

NCERT Solutions Class 6 Science Electricity and Circuits

Q1. Complete the sentence:

- (a) A device, which can break an electric circuit, is called as
(b) There are _____ terminals in an electric cell.

Ans.

- (a) Switch (b) two

Q2. Mark 'True' or 'False' for the following statements:

- (a) Electric current can pass through a sheet of thermocol.
(b) Electric current can flow through metals.
(c) Instead of metal wires, a jute string can be used to make a circuit.

Ans.

- (a) True (b) False (c) False.

Q3. Why do we use an electric switch? Name some electrical gadgets, which have switches in them.

Ans.

Electric switches are used to supply or cut electricity to the electric appliance by opening or closing the circuit. Some of the gadgets, which have electric switches built into them, are Torch, Mixer grinder.

Q4. Using a "conduction tester", it was found that the bulb begins to glow. Is that object a conductor or an insulator? Explain.

Ans.

If the object is a good conductor of electricity, only then current will pass through conduction tester and the bulb will glow. Hence, the object will be a conductor of electricity.

Q5. Why do electricians use rubber gloves while repairing electrical appliances?

Ans.

Our body is a good conductor of electricity whereas rubber is an insulator. During any repair work, if our body gets in contact with an electric wire carrying current, the current would pass through our body, which would lead to accidents. If we use rubber gloves, it would not allow electricity to pass through us. Therefore, electricians use rubber gloves while repairing electric switch.

Q6. Why do the handles of the tools such as screwdrivers and pliers (used by electricians for repair work) have rubber or plastic wrapped around them?

Ans.

Plastic and rubber are insulators, which do not allow electricity to pass through them. So, screwdriver and pliers have rubber and plastic covered on them so that electricity may not pass through these tools to the body of the electrician.

Q7. Why would the bulb not glow in the following arrangement given below?



Ans.

In the above figure, the one end of the tester is plastic, which is an insulator and the other end is a metal. In order to make the bulb glow, the circuit has to be closed, but the plastic being an insulator, won't allow the electricity to pass through. So, the bulb won't glow.

Q8. Complete the given circuit to make the bulb glow by connecting the wire.

Ans.

Q9. Sketch a circuit diagram to operate a bulb with dry cell.

Ans.



VERY SHORT ANSWER TYPE QUESTIONS

Q1. What is the direction of flow of current in a dry cell?

Ans.

In a closed circuit, the current flows from +ve to -ve terminal of the cell.

Q2. Name the +ve terminal of dry cell

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Ans.

Carbon rod with a metal cap on it.

Q3. Name the -ve terminal of a dry cell.

Ans.

Zinc metal plate.

Q4. What is a dry cell?

Ans.

It is a device, which converts chemical energy into electrical energy.

Q5. What is a solar cell?

Ans.

A device, which converts solar energy into electrical energy.

Q6. What is an open circuit?

Ans.

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

Q7. Mention any one use of insulators.

Ans.

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

Q8. What is the name of the thin wire inside an electric bulb?

Ans.

Tungsten filament

Q9. Would the bulb glow in the below given arrangement

Ans.

Q10. Sketch a bulb and identify the two terminals.

Ans.

SHORT ANSWER TYPE QUESTIONS

Q1. Mention any two advantages of a dry cell.

Ans.

(a) It converts chemical energy into electrical energy.

(b) It is small and light in weight.

Q2. What are conductors and insulators? Give one example each.

Ans.

A conductor is that which easily allows the passage of current through it.

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

Q3. Identify conductors and insulators from the following: Eraser, paper, matchstick, copper wire, pencil lead, polythene

Ans.

Conductors: Pencil lead, copper wire.

Insulator: Matchstick, Eraser, paper, polythene.

Q4. Name the scientists who invented the electric bulb and the electric cell.

Ans.

Electric cell: Alessandro Volta.

Electric bulb: Thomas Alva Edison.

Q5. Give one activity to prove that air is an insulator.

Ans.

Take an electric circuit; keep the terminals disconnected in the air. The bulb will not glow because air is an insulator and it does not allow the current to flow through it.

Q6. In any electric circuit, why does the wire, switches, bulb or devices become hot, when the switch is turned on and the current flows through it?

Ans.

This is because some of the electric energy is converted into heat energy.

Q7. What is the function of the reflector behind the bulb in headlights of a car?

Ans.

It reflects all the light rays beaming backward and focus it to the front side to provide a powerful beam.

Q8. If you touch an electric wire carrying current you get a shock, but when the birds sit on it, they don't get any shock. Why is that?

Ans.

Our body is a conductor of electricity, so when we hold the current carrying wire, the circuit is closed and the current flows through our body and enters earth but the birds, on the other hand, don't get any shock because the circuit is not closed. However, if the bird touches the earth wire, the circuit will get closed and current would pass through them.

LONG ANSWER TYPE QUESTIONS

Q1. (1) What is an electric circuit?

(2) Define the types of electric circuit.

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

Ans.

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

(2) There are two types of 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.

