NCERT Class 7 Science Chapter 14 Electric Current and Its Effects Summary and Notes Pdf

Part of the Class 7 Science Notes for Quick Revision is the free PDF download for Chapter 14 on Electric Current and Its Effects. NCERT Class 7 Science Notes Chapter 14 Electric Current and Its Effects is provided here. Electric Current and Its Effects is the fourteenth chapter of this curriculum that requires the students' full attention. To establish a firm knowledge base, this chapter must be adequately studied. Students will be better able to comprehend complex ideas about electric current in higher-level studies because of this foundation. Experts at Vedantu have written straightforward Class 7 Science Topic 14 notes to make it easier to review this chapter. Students may learn and recall these new ideas with the help of these revision notes. It may be found in PDF format. If you want to study this chapter, you can download it and use it offline.

NCERT Class 7 Science Chapter 14 Electric Current and Its Effects Introduction

Electricity is the most accessible energy source. Electricity is vital in our lives since it powers many devices, including computers, televisions, audio systems, refrigerators, washing machines, and electric lights. Without electricity, it would be impossible to live.

Power plants generate the electricity that is then delivered to households through underground cables or networks of electric poles and thin wires (or wires). The movement of electricity via a conductor may be used to define the electric current in this context (wires, cables).

"electricity" and "electric current" interchangeably in everyday conversations. Another way to get power is from an electric cell or battery. We must now integrate a cell or battery into a circuit to generate power. Let's investigate the electrical circuit now.

NCERT Class 7 Science Chapter 14 Electric Current and Its Effects Summary

In everyday life, electricity is a crucial source of energy.
A device that generates electricity is called an electric cell. Positive and negative terminals are present on an electric cell. The term "battery" refers to a grouping of two or more cells where the positive terminal of one cell is linked to the negative terminal of the following cell. An arrangement of several parts, including an electric cell, battery, switch, electric bulb, and cable, makes up an electric circuit. The entire electrical circuit runs from one terminal of an electric cell through a bulb and back to the second terminal. Electric components can be conveniently represented using symbols.

A wire heats up whenever an electric current passes through it. It is a result of the current's heating impact. A thin wire within the lightbulb is referred to as the filament, and whenever an electric current flows through it, it glows due to the current's heating effect. Electric irons,

heaters, immersion heaters, geysers, dryers, and other devices exploit the current's heating effect. The material, length, and thickness of a wire affect how much heat it generates.

High voltage currents are pushed through wires constructed of specific materials; they quickly melt and shatter. Electric fuses are created using these wires wire acts like a magnet whenever an electric current flows through it. This is the electric current's magnetic effect. In reality, magnets can be created using electric current. An example of the magnetic impact of an electric current is an electromagnet. It is utilized in several gadgets, including telephones, loudspeakers, and electric bells. An electromagnet, a hammer, and a gong are the three primary components of an electric bell. To prevent an energy problem later, we should practice energy conservation now.

NCERT Class 7 Science Chapter 14 Electric Current and Its Effects Notes

An electronic component is an element of an electric circuit that assists in the operation.

The electric circuit enables electricity to pass through it. It is utilized to deliver electricity for various reasons, including the operation of electric motors, the supply of energy to a lamp or a fan, and heat production.

Two or more cells are required to make up a battery. This is because the positive terminal of the next cell in a battery is linked to the negative terminal of the last cell, and so on.

Batteries are used in many different gadgets, including toys, remote controls, torches, and transistors.

Diagramming an electric circuit

1. Electronic components' signs may be utilized to sketch an electric circuit on paper. Electric circuit diagrams are used to illustrate an electric circuit using its symbols.

2. The key in the electrical circuit diagram serves as the circuit's switch. Anywhere along the circuit can contain the key.

Open Circuit - Because the circuit is insufficient when the key is turned off or opened, it is referred to as an open circuit.

Closed Circuit - The circuit is considered closed when the key is turned on or closed since it is finished.

What occurs when a bulb's filament cracks?

When a bulb's filament breaks, the bulb's connection is broken. Due to the lack of electricity, the light does not glow.

Electric current's heating effect

A wire heats up when an electric current flows through it. Electric current's heating impact is what causes this.

The following variables affect the heat generated in the wire:

1. the wire's composition
2. how long wire is
3. how thick the wire is

Several gadgets: use the heating effect of electric current

1. an electric heater
2. an electric iron
3. electric grill
4. geysers
5. coffee maker(electric)
6. toaster
7. hair dryer

Whenever electricity passes through any of these materials, a lot of heat is generated. Nevertheless, this amount is subject to change based on the device's specifications. The reason for this is that they each have an element, which is a coil of wire.

Different types, diameters, and lengths of wire are utilized in these appliances, depending on how much heat they require. Some wires can degrade or dissolve when heated.

Brightness in a Bulb as a Result of Electric Current's Heating Effect
The filament becomes heated when electricity is transmitted through a coil of wire within a light bulb. This causes the filament to glow, which causes the bulb to emit light.

An electric fuse is what?
A tool used to stop the damage from being done by too much electric current is called an electric fuse. This is because a wire gets heated when electricity flows through it, according to the heating effect of the electric current. As a result, a wire can melt or break if an excessive amount of electricity is passed through it.

The wire that makes up the electric fuse is composed of a metal or alloy with a low melting point. As a result, a significant current flows through a wire that readily breaks down. The fuse's circuit opens as soon as a wire breaks so that no electricity can flow through it.

Doing this might avoid a short circuit caused by a high electric current.

Different kinds of fuses are utilized for various gadgets, and some are even offered for homes.

How can too much current be introduced into a circuit?
Excessive current could pass through a circuit for the following reasons:
Connecting many devices to a single outlet occasionally causes the outlet to draw additional current. As a result, the circuit is put under more strain, which may result in a short circuit or fire.
When a wire's insulation is pulled off, the exposed wires may come into contact with one another, sparking or perhaps igniting (short circuit).

To avoid overloading and short circuits of any type, fuses are utilized.

Electric current's magnetic effect

electric current's magnetic effects
A magnetic field is created everywhere around a conductor whenever electricity passes through it. A magnetic needle that displays deflection can be used to see this. The deflection increases with increasing current.
The magnetic needle deflects oppositely if the circuit's current flows in the other direction.
The magnetic needle begins to deviate only when an electric current flows through the wire.

Magnetism and lightning

Air currents rise upward during thunderstorms, whereas water droplets fall downhill. As a result, charges between clouds and between clouds and the ground separate.
Air, which is often a poor conductor, starts conducting as the magnitude of charges rises, allowing electricity to flow. This charge passage is referred to as lightning because dazzling light flashes and thunder accompany it.
Lodestones are naturally occurring magnets created by lightning.
Electrified Magnet
Electromagnets
An electromagnet is a synthetic magnet that creates a magnetic field around a conductor when an electric current flows through it.
When no current flows through the conductor, this magnetic field vanishes.
Electromagnets and permanent magnets differ from one another.

Permanent magnets and electromagnets differ from one another.
Permanent magnets retain their magnetic properties
As long as the current flows through an electromagnet, a magnetic field exists around it. When the circuit is disrupted, they stop being magnetic.

Electricity's dangers
Electricity may be dangerous since it can start a fire from heating up or result in fatalities. Suitable insulation must be used in electrical circuits. Wires can come into contact with one another and short circuit if the insulation fails, resulting in electric shocks if handled.

electric bells
Electromagnets are used in electric bells. We complete the circuit by pressing the switch.

The bell's functioning is demonstrated below. Once the switch (K) is pushed, the circuit is current.
When activated, the electromagnet (E) produces a magnetic field that pulls the iron strip toward it.
The striker sounds like the bell or gong (B).
The contact at (T) breaks when the striking arm (A) strikes the gong, cutting off current to the circuit.
The electromagnet loses its magnetic field as a result of this.
The linked spring arm brings the striker back to its initial resting position.
When the contact is reestablished, the circuit is conducting current (provided the main switch is still pressed)
The procedure is repeated until the switch (K) is opened.

NCERT Class 7 Science Chapter 14 Electric Current and Its Effects Conclusion

Electric current is the flow of charges inside a circuit. Ampere is the electrical current's SI unit, provided by A. Conventionally, an electric current flows from a cell's positive terminal to its negative terminal.

FAQ :

Q1. What does "Electric current" mean?
Answer. Electric currents are flows of charged particles, such as electrons or ions that move through a conductor of electricity or a vacuum.

Q2. What does "Electromagnet" mean?
Answer. An electromagnet is a magnet where an electric current creates a magnetic field.

Q3. What advantages does electricity have?
Answer.
1. Using lights to light up spaces
2. technological devices
3. The healthcare sector and medical equipment
4. The engineering sector