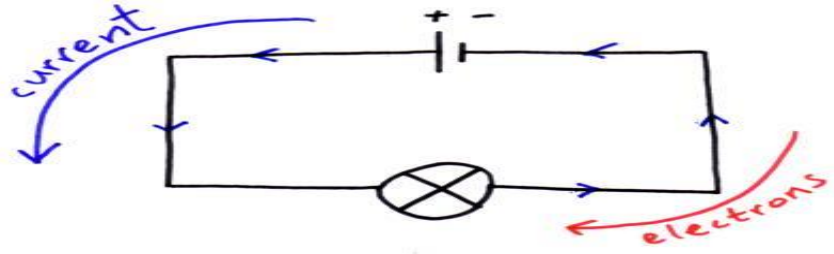
ATOMIC ENERGY CENTRAL SCHOOL

HANDOUT MODULE 1/ 2 CLASS- VII

CHAPTER – 14 ELECTRIC CURRENT AND ITS EFFECTS

Current:

An electric current is the flow of charged particles through a point . These charged particles are either positively or negatively charged. The flow of electrons i.e -ve charge is from negative terminal to positive terminal, while the flow of current is from positive terminal to negative terminal.



Symbols of electric components:

S.No.	Electric component	Symbol
1.	Electric cell	
2.	Electric bulb	
3.	Switch in 'ON' position	
4.	Switch in 'OFF' position	
5.	Battery	
6.	Wire	

The electric components are element of an electric circuit to function properly.

Cell – Cell is the source of energy in a circuit shown by a longer verticle line denoting positive terminal parallel to a short, thick verticle line denoting negative terminal.

An electric bulb is added to the circuit to detect the flow of the current.

The wire in the circuit can be denoted by the symbol of a long line.

Battery:- Battery is the combination of two or more cells. The negative terminal of one cell is connected to positive terminal of another cell.

The Switch can be placed anywhere in the circuit.

ELECTRIC CIRCUIT

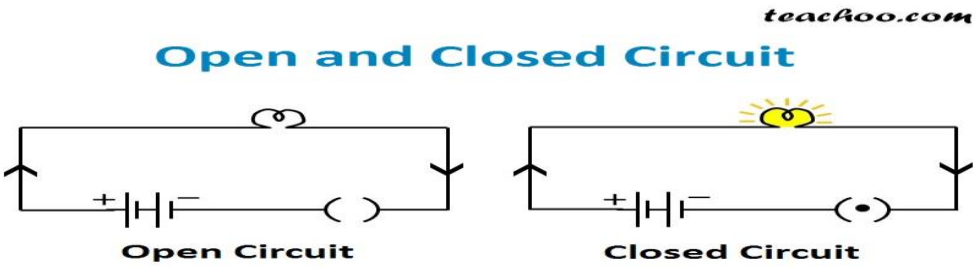
The electric circuit allows electricity to flow through it and used to provide electricity for various purposes like lighting a bulb, generating heat etc.

An electric circuit can be drawn on the paper with the help of symbols representing the electric components. Such a representation of an electric circuit using its symbols is known as an *Electric Circuit Diagram*.

There are two types of electric circuit:

1.OPEN ELECTRIC CIRCUIT – When the switch is in OFF position or the circuit is open, it is said to be an Open circuit as it is incomplete.

2.CLOSED ELECTRIC CIRCUIT – When the switch is in ON position and the circuit is complete it is said to be a closed circuit.



Properties of electric current:

HEATING EFFECT OF ELECTRIC CURRENT –

When the current passes through a wire the wire gets heated up. This is known as the *heating effect of electric current.* The heating property of the electric current depends upon following factors:

- The material of the wire
- The thickness of the wire
- The length of the wire

Many appliances work on the heating effect of electric current. For example- electric heater, iron, toaster, geyser, hair dryer etc.

All these appliances produce high amount of heat when electricity passes through them. However, the amount of heat produced depends upon the requirement of the device. This occurs because they contain *coil* of wire known *as element*.

Depending upon the amount of heat required by such appliances the wire used is of different length, size and material. If large amount of heat is passed, some wires can melt or break down as they get heated.

Production of light in a Bulb -
The filament of a bulb is a coiled wire that get heated when the electricity passes through it. This makes the filament glow and light is produced.

ELECTRIC FUSE:-

Fuse is an electric device that can be used to prevent the damage caused by an excess of electric current. The wire becomes hot when large amount of electric current is passed through it, this causes melting or breakdown of the wire. To prevent the appliances from breaking down fuse is used.

The electric fuse consists of a wire made up of metal having low melting point. As the wire breaks down easily if a high voltage current is passed through it. This prevents the further damage of the appliances or short circuit.

COMPACT FLUORESCENT LAMP (CFL):

CFLs do not have filament inside them instead they have two electrodes that produce light. This prevents the wastage of energy as they don’t get heat up.