Chemical Effects of Current and Light

Chemical reactions are caused by passing of electric current through a conducting solution. This is called chemical effect of electric current.

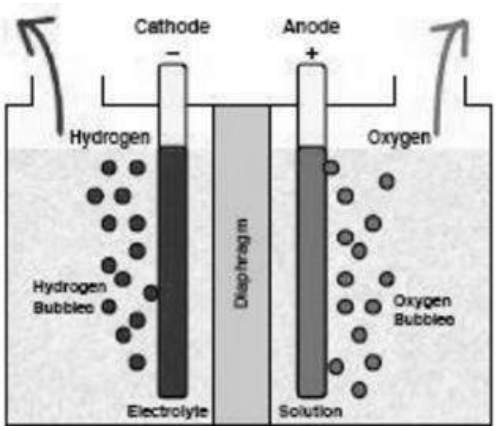
Electric Current

An electric current is a movement of charge. When two objects with different charges come in contact with each other and redistribute their charges, an electric current flows from one object to the other until the charge is distributed according to the capacities of the objects. If two objects are connected by a material that lets charge flow easily, such as a copper wire, then an electric current flows from one object to the other through the wire. Electric current is measured in ampere.

Conduction of Electric Current Through Liquids

A solution of a substance or a substance in a liquid state which can conduct electricity is called an electrolyte. Most liquids that conduct electricity are solutions of acids, bases and salts. The Chemical decomposition of an electrolyte on passing an electric current through it is called electrolysis.

Electrolysis is used very widely in industries like electroplating of metals, refining of copper and extraction of aluminum from ore. To make electrolysis happen there require two conductors cathode (-) and anode (+).



Electroplating

The process of covering a more reactive metal with a less reactive metal with the help of electricity is known as electroplating. Material to be plated should be connected as cathode while anode usually loses material.

Light

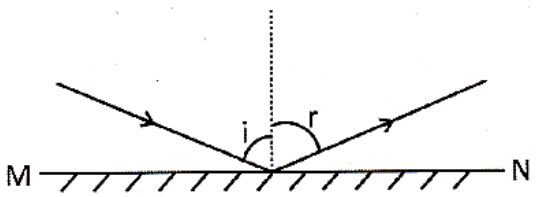
The sense of sight is one of the most important senses. Through this we see things around as. Light is an electromagnetic radiation, specifically radiation of a wavelength that is visible to the human eye.

Luminous and Non-luminous Objects

- The objects which emit their own light are called luminous objects. For example, sun, stars, electric bulb, glowing tube light, torch, etc.
- The objects which do not emit their own light are called non-luminous objects. For example, the moon, earth, table, chair, book, trees, etc.

Reflection of Light

Is the phenomenon of sending back light rays which fall on the surface of an object.



Laws of reflection

According to first law of reflection: the incident ray, the reflected ray and the normal ray, all lie in the same plane.

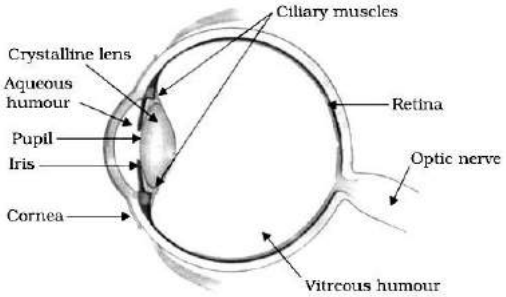
According to second law of reflection: the angle of incidence is always equal to angle of reflection.

Periscope

Is a long, tubular device used to observe over, around or through an object that is out of direct line of sight. A periscope works on the reflection of light from two plane mirrors arranged parallel to one another.

Human Eye

The eye enables us to see the various objects around us. The main parts of human eye are:



- **Cornea -** is the front part of the eye which is made of a transparent substance and it is bulging out.
- **Iris -** is the coloured part of the eye which has a hole at its centre which is called pupil. Iris controls the amount of light entering the eye by adjusting the size of pupil.
- **Eye lens -** is a convex lens made of a transparent and flexible material like jelly.
- **Ciliary muscles -** the eye-lens is held in position by ciliary muscles.
- **Retina -** is a screen at which the image is formed in the eye.

The optic nerve carries the image formed on retina to the brain in the form of electric signals.