



Chapter 5

SEPARATION OF SUBSTANCES

Notes

- Substances which contain more than one component mixed in any ratio are called MIXTURES.
- We need to separate substances in order
 - (i) To separate two different, but useful components.
 - (ii) To remove non-useful components.
 - (iii) To remove impurities or harmful components.
- Some methods of separating substances from their mixtures are handpicking, threshing, winnowing, sieving, sedimentation, decantation, filtration and evaporation.
- Handpicking is the process by which the unwanted particles are just picked up by hand.

Slightly large sized impurities can be separated by the method of handpicking. For example: pieces of dirt, stone and husk from wheat, rice or pulses are separated by this method.
- Threshing is the process of separating grains from stalks. This process is done by beating the grain seeds, sometimes with the help of bullocks. Now a days machines are also used.
- Winnowing is the process of separating heavier and lighter components of a mixture by wind or by blowing air. This method is commonly used by farmers.
- Sieving is the process of separating the components of a mixture which are of different sized. This method is usually seen in a flour mill or at construction site. It is used when components of a mixture have different sizes.
- Sedimentation is the process of settling down of heavier components from a mixture. Example: A mixture of sand and water etc.
- Decantation is the process of transferring clean liquid without disturbing the sediment.
- Decantation is also used for separating a mixture of two liquids that do not mix with each other. Example: A mixture of oil and water.

- Filtration is the process of separating unwanted solid particles from liquid by using filter paper or strainer. This process helps in separating a mixture of a solid and liquid. Example: Separating tea leaves from prepared tea. This method is also used in preparing fruits and vegetable juices and preparing cottage cheese in our homes.
- Evaporation is the process of conversion of water into its vapour. It is used to separate solid dissolved in liquid. It is by this process that common salt is obtained from sea water.
- Condensation is the process of conversion of water vapour into its liquid.
- Sometimes, we need to use more than one method of separation when one method is not sufficient to separate the different substances present in a mixture. Example: While separating a mixture of salt, sand and water, we use different methods such as decantation filtration, evaporation and condensation.
- A saturated solution is one in which no more of that substance can be dissolved.
- Larger quantity of substance can be dissolved by heating.
- Water dissolves different substance in different amounts.

