Separation of mixtures:

The different methods by which we can separate the components of mixtures are : Evaporation, Centrifugation, Decantation, Distillation, Fractional Distillation, Using separation funnel, Chromatography, and Sublimation. The method used is determined by the nature of mixtures. We will discuss each methods separately as below:

- **Evaporation**

This methods is used to separate the dissolved material from the solvent. When we evaporate the solution, the solvent get evaporated and the solute is left behind. For example, we can separate the mixture of salt and water by this methods.

- **Centrifugation**

In this method, when the mixture is spun rapidly, the denser particles are forced to settle at the bottom and lighter particles stays at the top. Therefore, can be separated from each other. For example, we can separate cream from milk by this method.

- **Decantation**

In this method we can separate the insoluble solid from a liquid by allowing the solid to settle down and pouring out the liquid off it. For example, we can separate the mixture of sand and water or gravel and water etc.

- **Distillation**

This method is used to separate a mixture of two liquid of different boiling points. In this method, we first heat the mixture of liquids and collect the vapour of the liquid/ which has low boiling points and evaporate first and then condensed it to get back the liquid.

- **Fractional Distillation**

This method is used for separating the mixture of two or more liquids having different boiling points. It is done by using fractionating column. In this process distillates are collected in fractions, boiling at different temperatures.

- **Using Separating Funnel**

This method is used to separate the mixture of two liquids, which are not miscible. In this method the mixture is put into the funnel and is allowed to settle. When it settles down the lighter liquid forms the upper layers and the heavier liquid forms the lower layers. The tap of the funnel is open and the lower layer is carefully drained out and thus, the liquids is separated.

- **Chromatography**

This method is used to separate the mixture of solute formed by distribution of dissolved materials between two immiscible phases, in which one is movable and other is stationary. For example, we can separate the components of dyes by this method.

- **Sublimation**

In this method the solid directly gets converted into gas without getting into liquid, when heated. This method can be used to separate the mixture of two solids, in which one sublimes easily. For example, the mixture of ammonium chloride and salts. The other compound which undergoes sublimation are **Camphor, Iodine, Naphthalene, anthracene etc**.