Methods of Separating Substances

Solution 1:

1. Air is a mixture of **gases**.
2. During the monsoons, **alum crystal** is swirled through drinking water.
3. **Iodine (or naphthalene or camphor or sal ammoniac)** is a sublimating substance.

Solution 2.a:

Mixtures are formed when substances, solid, liquid or gas, are mixed together.

Solution 2.b:

1. We need to separate substances from their mixtures according to our need or convenience.
2. For purification of substances which have to be consumed.
3. For reusing certain constituents from a mixture.

Solution 2.c:

Various methods are used to separate substances from a mixture. The method used depends on the properties of the constituent substances.

Methods of separating substances from mixtures are

1. Threshing
2. Winnowing
3. Sifting
4. Picking
5. Filtration
6. Settling
7. Sublimation
8. Magnetic attraction

Solution 2.d:

When some solids are heated, they change directly into a gas and not into a liquid first. This process is called sublimation.

Solution 3.a:

Apparatus: Beaker, spoon and strainer

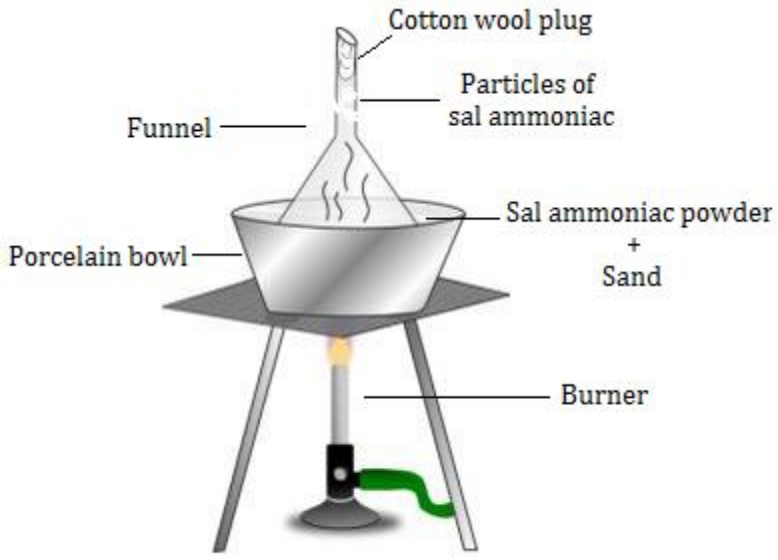
Observation:

1. Sand gets separated from salt water by straining.
2. Sand remains on the strainer and salt water flows out as a filtrate.
3. On heating the filtrate, the water evaporates from salt water leaving behind the salt crystals.

Solution 3.b:

Procedure for sublimation:

1. In a porcelain bowl, take a mixture of sal ammoniac powder and sand.
2. Plug the tube of a funnel with cotton wool and place it upside down over the mixture.
3. Slowly heat the mixture.
4. After sometime, particles of sal ammoniac get deposited on the inside of the funnel and on the cotton wool plug.
5. After cooling, it changes back into a solid and gets deposited on the cotton plug.
6. This is how sal ammoniac sublimates and is separated from the mixture.



Sublimation

Solution 4:

1. Sifting, winnowing
2. Picking, sifting
3. Picking, sifting
4. Sifting
5. Filtration, settling and decantation

Solution 5:

Sublimating substances: Iodine, sal ammoniac, camphor, naphthalene
Non-sublimating substances: Sand, salt, alum, sugar, water, oil, turmeric

Solution 6:

1. Evaporation
2. Sublimation
3. Settling and decantation
4. Sifting