NCERT Solution

Separation of Substances

Exercise

1. **Why do we need to separate different components of a mixture? Give two examples**.

Answer. When two or substances are mixed together is called mixture. We need to separate different components of the mixture are following reasons:

1. Remove the unwanted impurities.

2. Remove the substances that are harmful for our health.

3. Obtained pure substances.

4. Separate two different, but useful components.

Example:

(1) Grain is separated from stalks, while harvesting

(2) We filter the tea after preparing it.

(3) Milk or curd is churned to separate the butter.

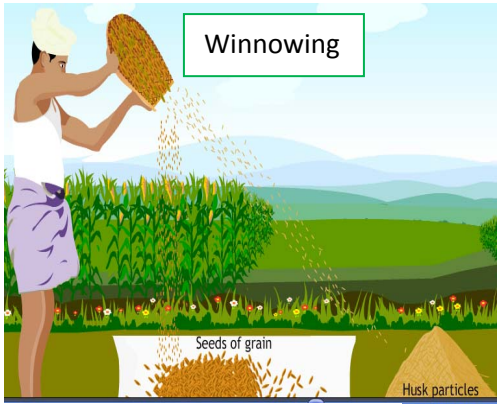
Filtering of tea after preparing it

2. **What is winnowing? Where is it used?**

Answer:

(1) Winnowing is a method to separate heavier and lighter components of a mixture by wind or blowing air.

(2) This method is commonly used by farmers to separate lighter husk particles from heavier seeds of grain.



3. **How will you separate husk or dirt particles from a given sample of pulses before cooking?**

Answer.

(1) This can be done by handpicking.

(2) The method of handpicking is normally used for separating slightly larger size impurities like piece of dirt, stone, and husk from wheat, rice or pulses.

4. **What is sieving? Where it is used?**

Answer:

(i) Sieving is the process to filter components of a mixture of different sizes. Sieving allows fine particles to pass through the hole of sieve, while bigger particles remain on the sieve.

Sieving is used in a flour mills to separate broken particles of grains from the flour. It is also used at construction to separate lumps, smaller stones from the mixture of sand and cement.

5. **How will you sand and water from their mixture?**

Answer.

(1) Allow mixture to stand undisturbed for sometime in a glass or container.

(2) Sand settles at the bottom of glass or container. This process is called sedimentation.

(3) Gently pour this water in another glass or container. This process is called decantation. We obtained a clear solution from its mixture.

(4) We may also use filter paper to remove find particle of sand. This process is called filtrations.

6. **Is the possible to separate sugar mixed with wheat flour? If yes, hoe will you do it?**

Answer: Yes.

(1) Mix sugar and wheat mixture in lot of water.

(2) Filter it.

(3) On the filter paper in wheat.

(4) Dry to get wheat flour.

(5) Filter is a sugar-water mixture.

(6) Evaporate this to get sugar.

Method used.

(a) Making solution.

(b) Filtration.

(c) Evaporatuon.

7. How would you obtain clear water from a sample of muddy water?

Answer:

(1) Allow mixture to stand undisturbed for sometime in a glass or container.

(2) After sometimes, mud settles at the bottom of glass or container. This process is called sedimentation.

(3) Upper layer is clear water.

(3) Pour the clear water gently in another glass or container. This process is called decantation.

(4) To remove the fine impurities, we can filter this water again with help of filter paper. This process is called filtrations.

8. **Fill up the blanks.**

(a) The method of separating seeds of paddy from its stalks is called _____.

(b) When milk, cooled after boiling, is poured onto a piece of cloth the cream (malai) is left behind on it. This process of separating cream from milk is an example of _____.

(c) Salt is obtained from seawater by the process of _____.

(d) Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called _____.

Answer:

(a) The method of separating seeds of paddy its stalks is called threshing**.**

(b) When milk, cooled after boiling, is poured on to a piece of cloth the cream (malai) is left behind on it. This process of separating cream from milk is an example of **churning.**

(c) Salt is obtained from seawater by the process of **evaporation.**

8. **True or False**

(a) A mixture milk and water can be separated by filtration.

(b) A mixture of powdered salt and sugar can be separate by the process of winnowing.

(c) Separation of sugar from tea can be done filtration.

(d) Grain and husk can be separated with the process of decantation.

Answer:

(a) A mixture milk and water can be separated by filtration. **(False)**

(b) A mixture of powdered salt and sugar can be separate by the process of winnowing. **(False)**

(c) Separation of sugar from tea can be done filtration. **(False)**

(d) Grain and husk can be separated with the process of decantation. **(False)**

10. Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to the lemonade before or after dissolving sugar? In which case would it be possible to dissolve more sugar?

Answer:

(1) We should add ice to the lemonade after dissolving sugar.

(2) It was be possible to dissolve more sugar before adding ice.