

Exercise Question

Page Number: 44-45

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

When two or more substances are mixed together, they form a mixture. Components of a mixture should be separated because some components may not be useful or may spoil the useful component of the mixture.

Examples:

Tea leaves are separated from the liquid with a strainer while preparing tea.

Removal of stone pieces from wheat, rice or pulses by hand.

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

The method of separating the components from a mixture is known as winnowing. In this method, heavier and lighter components of a mixture are separated by wind or by blowing air. This method is 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?**Solution:**

Husk and dirt particles are separated from pulses by winnowing.

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

Sieving is a method in which fine particles are sieved through holes in the sieve while the bigger impurities remain on the sieve. Sieving is used in a flour mill to separate impurities like husk and stones from wheat before grinding it. It is also used at construction sites to separate pebbles and stones from sand.

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

Sand and water are separated from their mixture by the following steps:

- a) The mixture is allowed to stand without any disturbances.
- b) Now, sand settles down.
- c) Slowly pour the water into another container to obtain sand in the bottom.

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

Solution:

Yes, it is possible to separate sugar mixed with wheat flour by the following method:

- a) Mix sugar and wheat flour in water.
- b) Stir the solution to allow the sugar to dissolve.
- c) Now, filter the mixture.
- d) Filtrate contains the sugar solution, and the residue will be wheat flour.

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

Solution:

The following process should be carried out to obtain clear water from muddy water:

- i) Allow muddy water to stand.
- ii) Mud gets settled down in the water.
- ii) Slowly pour water into another container.

8. Fill in the blanks.

- (a) The method of separating the 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 _____.

Solution:

- (a) The method of separating the seeds of paddy from its stalks is called **threshing**.
- (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 **filtration**.
- (c) Salt is obtained from seawater by the process of **evaporation**.
- (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 **decantation**.

9. True or false.

- (a) A mixture of milk and water can be separated by filtration.
- (b) A mixture of powdered salt and sugar can be separated by the process of winnowing
- (c) Separation of sugar from tea can be done with filtration.

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

Solution:

- a) False
- b) False
- c) False
- d) 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?

Solution:

Ice should be added to lemonade after dissolving sugar. It is possible to add more sugar before adding ice.

