

Q1. Why do we need to separate different components Of a mixture? Give two examples.

Ans: We need to separate different components of a mixture because of the following reasons:

1. To separate two different, but useful components
2. To remove non-useful components.
3. To remove impurities or harmful components.

Examples: Separating stones from rice and Churning milk to obtain butter.

Q2. What is winnowing? Where is it used?

Ans: Winnowing is the process used to separate heavier and lighter components of a mixture by wind or by blowing air.

This process is used by farmers to separate lighter husk particles from heavier seeds or grains.

Q3. How will you separate husk or dirt particles from a given sample of pulse before cooking?

Ans: Husk or dirt particles from a given sample of pulse are separated by hand picking before cooking.

Q4. What is sieving? Where is it used?

Ans: Sieving is a process by which fine panicles are separated from bigger particles by using sieve.

It is used in the flour mills or at construction sites.

Q5. How will you separate sand and water from their mixture?

Ans: Sand is separated from water by the process of sedimentation and decantation methods. First we leave this mixture for some time. After sometime, the sand which is heavier is settled down at the bottom. After that, we will pour water into another container and the mixture will be separated.

Q6. Is it possible to separate sugar mixed with wheat flour? If yes, how will you do it?

Ans: Yes, It is possible to separate sugar mixed with wheat flour.

Sugar can be separated from wheat flour by sieving. Due to differences in the size of the particles, sugar will remain on the sieve and the fine wheat flour will pass through the holes of the sieve.

Q7. How will you obtain clear water from a sample of muddy water?

Ans: We can obtain clear water from a sample of muddy water by the process of filtration. In this method, a filter paper folded in the form of a cone is fixed on the funnel. The mixture is then poured onto the filter paper. Solid particles i.e., the mud particles will remain on the filter paper whereas clear water will pass through it.

Q8. Fill in the blanks

- (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. The process of separating cream from milk is an example of **filtration**
- (c) Salt is obtained from seawater by 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**.

Q9. State True or False

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

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

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

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

Q10. Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to lemonade before or after dissolving sugar? In which case would it be possible to dissolve more sugar?

Ans: We should add ice only after dissolving sugar in lemonade because more sugar can be dissolved at high temperatures. After mixing with ice, it gets cooled which enables it to dissolve less sugar in it.

Extra Questions And Answers

Q1. Name any four methods used for separation of substances.

Ans: Hand picking, Winnowing, Sieving and Filtration

Q2. Define the following

1. Threshing
2. Decantation
3. Evaporation
4. Condensation

Ans:

1. Threshing
Threshing is a process used to separate grains from stalks by beating.
2. Decantation
The process in which water is removed when heavier components of mixture settled is called decantation.
3. Evaporation
The process of conversion of water into its vapour is called evaporation.

4. Condensation

The process of conversion of water vapour into its liquid form is called condensation.

Q4. How is salt prepared from sea water?

Ans: Salt is prepared from seawater by evaporation and condensation. Sea water is collected in a shallow pit and allowed to evaporate. After the evaporation of water, crystals of salts are obtained. Common salt is then obtained from this mixture of salts by further purification.

Q5. What kind of substances can be separated by

1. sieving
2. hand picking
3. decantation

Ans:

Method	Kind of substance
Sieving	Component of a mixture having different sizes
Hand-picking	Slightly large size impurities
Decantation	a) A mixture of two liquids that do not mix with each other b) A mixture of solid and liquid

Q6. Name the methods used in separating these mixtures

Sand and husk, Stone and pulses, Petrol and water, Grains from stalks, Seeds and pulps from its fruits, Saw dust and water, Butter from milk and Cement and pebbles.

Ans:

Mixture	Method used
Sand and husk	Winnowing
Stone and pulses	Hand-picking
Petrol and water	Decantation
Grains from stalks	Threshing
Seed and pulp from its fruits	Filtration
Saw dust and water	Filtration
Butter from milk	Churning
Cement and pebbles	Sieving