

Very Short Answer Questions

Q.1. Which method is used to separate tea leaves from tea?

Ans. Sieving

Q.2. Define evaporation.

Ans. It is the process of conversion of water into its vapour.

Q.3. What is a saturated solution?

Ans. A saturated solution is one in which no more of that substance or solute can be dissolved.

Q.4. What is a solution?

Ans. When a substance mixes with a liquid in such a way that the substance is no longer seen, a solution is formed.

Q.5. How can a saturated solution be made unsaturated?

Ans. By raising the temperature, a saturated solution can be made unsaturated.

Q.6. What are the main reasons for separation of components of a mixture?

Ans. Separation is done when the components are mixed randomly and are undesirable.

Q.7. Define loading.

Ans. The process of adding alum to water to fasten sedimentation is called loading.

Short Answer Questions

Q.1. Name and describe briefly a method which can be helpful in separating a mixture of husk from grains. What is the principle of this method?

Ans. Winnowing is the method used for separating a mixture of husk from grains. It is based on the principle that the lighter husk particles are carried away by the wind leaving behind the grains.

Q.2. How do we get salt from sea water?

Ans. First sea water is collected in shallow pits and due to heat of the Sun, water starts evaporating. After few days, the water evaporates completely leaving behind solid salt.

Q.3. How will you separate the components of the following?

(i) Tea leaves from tea

Ans. Filtration or sieving,

(ii) Pebbles from rice

Ans. Handpicking or sieving

(iii) Butter from milk

Ans. Churning

(iv) Sand and husk

Ans. Winnowing

(v) Water and kerosene oil

Ans. Separating

(vi) Mud and water

Ans. sedimentation and decantation

Q.4. Distinguish between the following:

(i) Pure substances and Mixture

S.No	Pure substances	Mixture
1	These are made up of only one kind of particles For example, silver, copper, etc.	These are made up of two or more elements or compounds For example, sea water, smoke, etc.

(ii) Threshing and Winnowing

S.No	Pure substances	Mixture
1	The process by which the grains are released from the chaff.	It is the process to separate husk from grains.
2	This is done either by hand or by using animals.	It is done by hand with the use of wind or blowing air.

Long Answer Questions

Q.1. Both Sarika and Mohan were asked to make salt solution. Sarika was given a teaspoonful of salt and half a glass of water, whereas Mohan was given twenty teaspoonful of salt and half a glass of water. [NCERT Exemplar]

(i) How would they make salt solutions?

Ans. They would mix salt with water to make salt solution.

(ii) Who would be able to prepare saturated solution?

Ans. Mohan's solution would be saturated because in Mohan's case some salt would remain undissolved and settle at the bottom of the glass.

Q.2. Paheli was feeling thirsty but there was only a pot of water at home which was muddy and unfit for drinking. How do you think Paheli would have made this water fit for drinking if the following materials were available to her.

Alum, tub, muslin cloth, gas stove, thread, pan and lid [NCERT Exemplar]

Ans.

- i. Filtration using muslin cloth.
- ii. Swirl with alum and leave water undisturbed for some time.
- iii. Decantation.
- iv. Boil for 10 minutes in covered pan.
- v. Cool, filter and now it is fit for drinking.

Q.3. Read the story titled "WISE FARMER" and tick the correct option to complete the story.

A farmer was

- i. sad/happy to see his healthy wheat crop ready for harvest. He harvested the crops and left it under the
- ii. Sun/rain to dry the stalks. To separate the seeds from the bundles of the stalk he
- iii. handpicked/threshed them. After gathering the seed grains, he wanted to separate the stones and husk from it. His wife
- iv. winnowed/threshed them to separate the husk and later
- v. sieved/handpicked to remove stones from it. She ground the wheat grains and
- vi. sieved/filtered the flour. The wise farmer and his wife got a good price for the flour.

Ans.

- i. happy
- ii. Sun

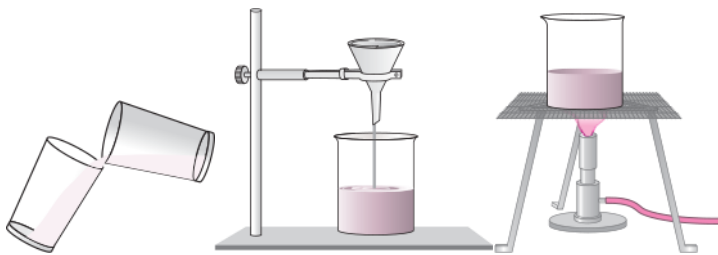
- iii. threshed
- iv. winnowed
- v. handpicked
- vi. sieved

They got a good price as they used appropriate methods of separation to get good quality of flour.

Q.4. You are provided with a mixture of salt, sand, oil and water. Write the steps involved for the separation of salt, sand and oil from the mixture by giving an activity along with the diagram.

Ans.

- i. Oil being insoluble in water forms a separate layer. The top layer of oil is decanted to separate it from the
- ii. The mixture is then filtered with the help of a filter paper and funnel. The mixture is poured on the filter paper. Sand particles being bigger in size do not pass through the filter paper, they remain on the filter and the liquid is collected in the beaker placed under the funnel.
- iii. Heat the beaker and allow it to boil. Water evaporate leaving behind the salt.



Q.5. A mixture of iron nails, salt, oil and water is provided to you. Give stepwise methods to separate each component from this mixture. [NCERT Exemplar]

Ans.

- i. Iron nails are separated from the mixture by handpicking.
- ii. The mixture is allowed to stand for some time. Two separate layers will be formed. The top layer of oil is decanted to separate it from the mixture.
- iii. Pour this liquid into a kettle, close its lid and heat it. Now take a metal plate with some ice on it and hold this plate just above the spout of the kettle. The steam coming out condenses when comes in contact with the metal plate and forms water and salt is left behind.

Q.6. Name the steps and methods you will use to separate the following:

(i) Coconut oil, salt and water

Ans. Coconut oil is separated by using a separating funnel and the salt is separated by evaporation.

(ii) Chalk powder, water and stones

Ans. Stones being heavy are separated by sedimentation and chalk powder is separated by filtration.

(iii) Iron filings, sand and salt

Ans. Iron filings are separated using a magnet and the sand is separated by dissolving in water followed by sedimentation and decantation.

Hots (Higher Order Thinking Skills)

Q.1. Why does visibility increase after rain?

Ans. Rain dissolves all the dust particles in atmosphere and brings them down to earth, thus increasing visibility.

Q.2. Raghav is given a glass bottle with some white substances in it that is either chalk or sugar. How can he find out which of the two is sugar or chalk, without tasting it?

Ans. This can be done by dissolving both of them in water. Sugar is soluble in water but chalk is not.