



INDIAN SCHOOL AL WADI AL KABIR

Class: VI	Department: SCIENCE	Date of completion: 30.06.2020
Worksheet No.: 4 WITH ANSWERS	Topic: SEPARATION OF SUBSTANCES	Note: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I. OBJECTIVE TYPE QUESTIONS:

- The property used in separating a mixture of two solids by winnowing is
 - difference in color
 - difference in size
 - difference in weight**
 - attraction by magnet
- Which method is used to obtain pure liquid from a solution?
 - Distillation
 - Condensation**
 - filtration
 - loading
- Which of the following can dissolve in water?
 - Only solids
 - only solids and liquids
 - Solids, liquids & gases**
 - only liquids
- Identify the process shown below



- Decantation
 - Filtration
 - Condensation
 - Sedimentation**
- A solution is said to be saturated if _____
 - It can dissolve more of the substance in it
 - It cannot dissolve no more solute in it**
 - It can be filtered
 - It becomes very sweet
 - A mixture of coconut oil and water can be separated by _____
 - Filtration
 - handpicking
 - decantation**
 - evaporation and condensation

7. Peanuts are separated from a mixture of pulses and rice by _____

i) winnowing

ii) sieving

iii) Filtration

iv) **handpicking**

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below-

i) Both A and R are true and R is correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

8. Assertion (A): Mixture of sawdust and water can be separated by sedimentation and decantation.

Reason (R): Sawdust is not heavier than water.

iv) A is false but R is true

9. Assertion (A): Sieving is used for separating components of a mixture on the basis of their particle sizes.

Reason (R): Sieving is done with help of wind.

[iii) A is true but R is false.]

10. Assertion (A) : It is possible to separate salt and water from salt solution.

Reason (R) : Salt can be obtained by evaporation method and water can be obtained by condensation method.

[i) Both A and R are true and R is correct explanation of the assertion.]

II - BASIC CONCEPT LEVEL:

1. Name the method by which we can separate seeds and pulp from the fruit juice.

[Seeds and pulp from the fruit juice can be separated by filtration method]

2. What is meant by condensation?

[The process of conversion of water vapour into its liquid form on cooling is called condensation]

3. What is threshing?

[The process that is used to separate grain from stalks is called threshing]

4. What do you mean by saturated solution?

[A saturated solution is one in which no more solute can be dissolved]

5. Which method is used to separate heavier seeds of grain from husk?

[Winnowing method is used to separate heavier seeds of grain from husk]

6. How is cream separated from milk?

[Cream is separated from milk by churning.]

7. How will you separate water from petrol?

[Water and petrol are immiscible liquids, so they can be separated by sedimentation and decantation method]

8. Define solute and solvent.

[A substance that dissolves in a solvent to form a solution is called solute.

A substance in which other materials dissolve is called solvent.]

9. What is sedimentation?

[Sedimentation is the process in which heavier solid components settle at the bottom of a liquid.]

10. Give an example from our daily life where the process of sedimentation and decantation is used.

[Rice or pulses washed before cooking. When we add water, the impurities go into water. Rice or pulses settle at the bottom by sedimentation and the water along with dust is poured out by decantation.]

III – INTERMEDIATE LEVEL:

1. Distinguish between Soluble and insoluble substances.

[Substances that dissolve in liquid are soluble substance. Example- salt, sugar.

Substances that do not dissolve in liquid are called insoluble substances. Example- sand, saw dust]

2. Mention the method that can be used for the separation of wheat sugar and husk.

[For separating husk from the mixture, we shall follow the winnowing method as husk is lighter than other two components

Wheat and sugar can be separated by sieving as they are in different sizes.]

3. Soni accidentally mixed few green gram seeds with rice flour and her brother helped her in separating the things. Which method they would have used to things and why?

They would have used handpicking method as green gram seeds are small in quantity, large in size and different in colour.

4. How will you obtain clean water from a sample of muddy water?

[Clean water can be obtained from a sample of muddy water by the process of filtration. Filter paper has very fine pores and does not allow fine solid particles to pass through it. So it is folded

in the form of cone and fixed onto a funnel. The mixture is then poured on the filter paper. The solid particles remain on the filter and clean water is obtained.]

5. What happens when saturated salt solution is heated after adding small quantity of salt to it?

The undissolved salt in the bottom of the beaker will dissolve. Larger quantity of salt can be dissolved in water on heating.

6. How is common salt obtained from seawater?

[Sea water is captured in shallow pits, slowly the water gets heated by sunlight and changes into water vapour by the process of evaporation. After complete evaporation of water, salt remains.

This salt is sent for purification.]

7. Why do we need to separate substances from a mixture?

a. To separate two different but useful components

b. To remove non-useful components

c. To remove impurities or harmful components.]

7. Explain how you will separate fine sand from larger sand particles.

[Sieving allows the fine sand particles to pass through the pores of the sieve while the larger sand particles remain on the sieve.]

8. Name the method used to separate the following mixtures.

a. Papaya seeds from urad dal - handpicking

b) Husk from rice - winnowing

c) Cornflakes from milk - filtration]

IV – ADVANCED LEVEL:

1. Why water is called universal solvent?

[Water can dissolve different kinds of substances. So water is called as universal solvent.]

2. If a solid dissolve in the liquid, sedimentation and decantation method cannot be used. Why?

[Sedimentation and decantation methods are used to separate insoluble solid components from liquid.]

3. Observe the method of separation shown and answer the questions.

a. Identify the process and label the parts marked.

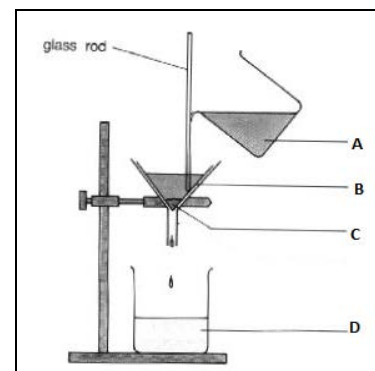
(Filtration.) [A –mixture B-filter paper C-residue D- filtrate]

b. Define the process.

[The method of separating insoluble components from a mixture using a filter]

c. How is this method better than sedimentation and decantation?

[Filtration can be used to separate even smaller solid



particles, which may not completely settle down with sedimentation. During decantation there is a chance of the particles mixing back in the liquid]

d. Name one example from your daily life where you use this method of separation?

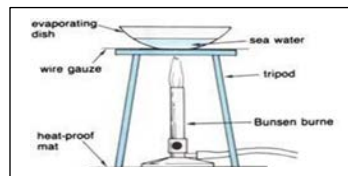
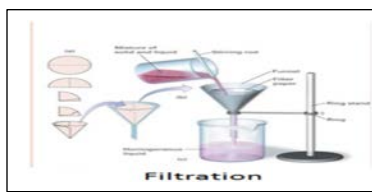
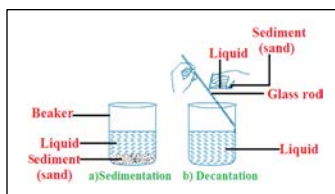
[Separating tea leaves from tea using a filter.]

4. A transparent bottle, half filled with water is left outside in sun for a few hours. After sometime, some water droplets are observed on the inner upper surface of the bottle. Which process do you think is the cause of these droplets? Why?

[Evaporation and condensation. As the bottle filled with water is left in sun, the water evaporates due to the heat of the sun. As the vapour touches the lid, it condenses to form water droplets.]

5. 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.

[Decantation → Filtration → Evaporation]



V. EXEMPLAR QUESTIONS

1. During the process of filtration, should we use more number of filters with progressively smaller pore size or use one filter with small mesh size? Explain the reason for your answer.

[The size of pores in the filter should be smaller than the size of the solid particles being separated, so one filter with small mesh size can be used]

2. Devise and write a step by step plan of the method used to separate a mixture of sand, dead matches, small pebble and steel paper clips.

[i) Steel paper clips can be removed with help of a magnet as they get attracted to it.

ii) Dead matches can be removed by hand picking method

iii) Mixture of sand and small pebbles can be removed by sieving]

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