INDIAN SCHOOL AL WADI AL KABIR		
Class: VI	**DEPARTMENT: SCIENCE** **2026-2027**	**DATE: 14/11/2026**
WORKSHEET NO: 10	**TOPIC: METHODS OF SEPARATION IN EVERYDAY LIFE**	**NOTE: A4 FILE FORMAT**
CLASS & SEC:	**NAME OF THE STUDENT:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS

1. A shopkeeper wants to separate tiny pieces of iron from powdered flour. Which tool would be most useful?

a) Sieve
b) Magnet
c) Filter paper
d) Winnowing basket

2. A mixture contains large pebbles and fine sand. Which method would separate them most effectively?

a) Evaporation
b) Sieving
c) Churning
d) Decantation

3. A farmer allows grain and husk to fall from a height on a windy day. Which property helps in separation?

a) Difference in colour
b) Difference in solubility
c) Difference in weight
d) Difference in melting point

4. Which mixture cannot be separated by filtration?

a) Chalk powder and water
b) Tea leaves and tea
c) Sand and water
d) Sugar dissolved in water.

5. Mud settles at the bottom when muddy water is left undisturbed. This process is called:

a) Condensation
b) Sedimentation
c) Winnowing
d) Sieving

6. Which method is most suitable for obtaining dissolved salt from salt solution?

a) Handpicking
b) Magnetic separation
c) Evaporation
d) Sieving

7. Oil forms a separate layer on water because:

a) Oil dissolves in water
b) Oil is insoluble in water and floats
c) Water changes into vapour
d) Oil settles below water

For the following question, two statements are given: one labelled Assertion (A) and the other labelled Reason (R).
Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below-
(A) Both A and R are true, and R is the correct explanation of the assertion.
(B) Both A and R are true, but R is not the correct explanation of the assertion.
(C) A is true, but R is false.
(D) A is false, but R is true

8. **Assertion (A):** Dissolved sugar can be separated from water by sedimentation.
Reason (R): Sugar dissolves completely in water.

9. **Assertion (A):** A sieve can separate bran from fine flour.
Reason (R): The particles of the two components are of different sizes.

10. **Assertion (A):** It is possible to separate salt and water from a salt solution.
Reason (R): Salt can be obtained by the evaporation method, and water can be obtained by condensation method.

II. SHORT ANSWER TYPE QUESTIONS (2 M):

1. Identify the appropriate method of separation used for each of the following mixtures:

a) Stones mixed with rice – [Hint: Handpicking.]
b) Iron nails mixed with sawdust – [Hint: Magnet.]
c) Tea leaves separated from prepared tea – [Hint: Filtration]
d) Butter separated from curd - [Hint: Churning]

2. Why is it important to separate mixtures? Give three reasons with examples.

[Hint: To remove harmful substances – e.g., removing stones from pulses.
To get useful components – e.g., extracting salt from seawater.
To improve quality – e.g., removing husk from grains for better cooking.]

3. What is the use of a magnet in separation techniques? Give one example. [Hint: A magnet is used in separation techniques to separate magnetic materials from non-magnetic ones. For example, iron nails can be separated from a mixture of iron nails and sawdust using a magnet, as iron is attracted to the magnet while sawdust is not.]

4. How does the process of sieving differ from that of filtration? (WBQ) [Hint: Filtration is used to separate insoluble solids from liquids using a filter paper or cloth. For example, separating tea leaves from tea. Sieving is used to separate a mixture of solid particles of different sizes using a sieve. For example, separating larger stones from flour. So, filtration separates solids from liquids, while sieving separates two solids of different sizes.]

5. What method of separation is being shown in the picture below? Explain how it works.



[Hint: Churning: Butter, being lighter, floats on top while buttermilk remains below.]

III. SHORT ANSWER TYPE QUESTIONS (3 M):

1. How is common salt obtained from seawater? [Hint: Seawater is captured in shallow pits; slowly, the water gets heated by sunlight and changes into water vapour by the process of evaporation. After the complete evaporation of water, salt remains. This salt is sent for purification.]

2. What is the significance of solubility in methods like evaporation and filtration? (WBQ) [Hint: Solubility is important because it determines whether a substance can be separated by filtration or evaporation.
A soluble solid dissolves in the liquid and passes through a filter, so it can be recovered by evaporation. Salt and water can be separated by evaporation.

An insoluble solid does not dissolve and can be separated directly by filtration. Eg. Sand and water can be separated by filtration.]

3. Explain the role of surface area in increasing the rate of evaporation. (WBQ) [Hint: The larger the surface area of a liquid, the faster it evaporates because more liquid particles are exposed to the air at the surface. Therefore, more particles can escape into the air at the same time. Example: Water spread in a wide plate evaporates faster than the same amount of water kept in a narrow glass.]

4. What is the basis of using handpicking as a method of separation? [Hint: The handpicking method is used when: (i) The components to be separated are large and easily distinguishable; (ii) Unwanted components are present in small quantities; (iii)The shape, size and colour of the components are different.]

5. Riya prepared two mixtures: one containing sand and water, and the other containing salt and water. She left both mixtures undisturbed for some time and then tried to separate the solids by decantation. She was successful with only one mixture.

a) Which mixture could Riya separate using decantation? [Hint: Sand and water.]

b) Why was she unable to separate the solid from the other mixture using this method? [Hint: Salt dissolves completely in water and does not settle at the bottom. Therefore, it cannot be separated by sedimentation and decantation.]

6. Name and describe briefly a method which can help separate a mixture of husk from grains. What is the principle of this method? [Hint: By using the process of winnowing, the husk can be separated from the grains. When the mixture is allowed to fall from a height, the lighter husk is carried away by air, and the heavier grains fall on the ground. This method is based on the principle that a mixture with components of different weights can be separated with the help of wind.]

IV. LONG ANSWER TYPE QUESTIONS (5 M):

1. a. Where is decantation used? Give two examples.
[Hint: (i) Decantation is used to separate insoluble solids or liquids from a liquid. Rainwater is a mixture of mud and water. It is purified by decantation.
(ii) Oil and water also get separated by this method because oil floats up.]

b. How is the filtration method better than sedimentation and decantation?
[Hint: 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 into the liquid.]

c. Name one example from your daily life where you use the filtration method of separation?
[Hint: Separating tea leaves from tea using a strainer.]

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS:

1. Read the following passage and answer the questions.

During a school garden activity, Aarav collected a bucket containing water, soil, dry leaves and a few iron pins. He first removed the large leaves by hand. Then he used a magnet to collect the iron pins. He left the remaining muddy water undisturbed and noticed soil settling at the bottom. Finally, he carefully poured the clearer water into another container and filtered it.

i) Which method did Aarav use to remove the dry leaves?
[Hint: Handpicking.]

ii) Why could a magnet separate the iron pins?
[Hint: Iron is a magnetic material, so it is attracted to the magnet. Whereas water, soil and leaves are non-magnetic.]

iii) Why did Aarav filter the water after decantation?
[Hint: To remove very fine, suspended soil particles that did not settle during sedimentation and remained in the water.]

ANSWERS FOR OBJECTIVE TYPE QUESTIONS (1 to 10)

1. (b) Magnet
2. (b) Sieving
3. (c) Difference in weight
4. (d) Sugar dissolved in water
5. (b) Sedimentation
6. (c) Evaporation
7. (b) Oil is insoluble in water and floats
8. (D) A is false, but R is true.
9. (A) Both A and R are true, and R is the correct explanation of the assertion.
10. (A) Both A and R are true, and R is the correct explanation of the assertion.

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