



**INDIAN SCHOOL AL WADI AL KABIR**

<b>Class: VI</b>	<b>DEPARTMENT: SCIENCE 2025-2026</b>	<b>DATE: 06/11/2025</b>
<b>WORKSHEET NO: 7</b>	<b>TOPIC: METHODS OF SEPARATION IN EVERYDAY LIFE.</b>	<b>NOTE: A4 FILE FORMAT</b>
<b>CLASS &amp; SEC:</b>	<b>NAME OF THE STUDENT</b>	<b>ROLL NO.</b>

**I. OBJECTIVE-TYPE QUESTIONS**

1. Which method is best to separate small stones from rice?
  - a) Magnetic separation
  - b) Hand-picking
  - c) Filtration
  - d) Decantation
2. Which method is used to separate husk from grains?
  - a) Sieving
  - b) Winnowing
  - c) Sedimentation
  - d) Hand-picking
3. What is used to separate solids of different sizes, like flour and bran?
  - a) Sieving
  - b) Winnowing
  - c) Decantation
  - d) Sedimentation
4. Why is hand-picking not suitable for separating salt from sand?
  - a) Because salt is heavier
  - b) Because both are in solid form
  - c) Because salt dissolves in water
  - d) Because both particles are too small
5. Which of the following mixtures can be separated by decantation?
  - a) Salt and water
  - b) Oil and water

- c) Sugar and water
- d) Alcohol and water

6. How can you separate a mixture of iron nails and sand?

- a) Winnowing
- b) Filtration
- c) Magnetic separation
- d) Evaporation

7. In which method do heavier particles settle down at the bottom of a container?

- a) Filtration
- b) Winnowing
- c) Sedimentation
- d) Sieving

***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 (i), (ii), (iii) and (iv) as given below***

***i) Both A and R are true, and R is the 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):** A Mixture of sawdust and water can be separated by sedimentation and decantation.

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

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

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

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. Name the method used to separate the following mixtures.

- a) Papaya seeds from urad dal – [Hint: Handpicking.]
- b) Iron filings from sand – [Hint: Magnet.]
- c) Cornflakes from milk – [Hint: Filtration]
- d) Cream from milk - [Hint: Churning.]

2. Why do we decant water from boiled rice before serving? [Hint: We decant water from boiled rice before serving to remove the excess water that is not needed after cooking. This helps to make the rice dry and fluffy, and also improves its taste and texture.]

3. 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.]

4. 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.]

5. What is the difference between filtration and sieving? [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.]

6. 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: 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 the complete evaporation of water, salt remains. This salt is sent for purification.]

2. A transparent bottle, half-filled with water, is left outside in the sun for a few hours. After some time, 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? [Hint: Evaporation and condensation. As the bottle filled with water is left in the sun, the water evaporates due to the heat of the sun. As the vapour touches the lid, it condenses to form water droplets.]

3. What is the basis of using handpicking as a method of separation? [Hint: Hand picking 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.]

4. If a solid dissolves in the liquid, the sedimentation and decantation method cannot be used. Why? [Hint: Sedimentation and decantation methods are used for separating insoluble substances that are heavier than water. Insoluble substances in a mixture which are heavier than water settle at the bottom of the container when left undisturbed. Whereas soluble solids completely dissolve in liquid and become inseparable from the liquid by the process of sedimentation and decantation.]

5. 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.]

6. Explain how you would separate a mixture of sand and salt. Name the methods used in the correct sequence. [Hint: Add water to the mixture and stir. After stirring for some time, we will notice that the salt will dissolve; sand will not. Use filtration to separate the sand (residue) from the saltwater solution (filtrate). Use the evaporation process to recover salt from the saltwater by heating it until the water evaporates.]

#### **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.

Ritu watched her grandmother clean wheat at home. First, her grandmother spread the wheat on a large flat surface. She slowly picked out small stones and other visible impurities. After that, she

used a winnowing tray and tossed the wheat into the air. The lighter chaff was blown away by the wind, while the heavier wheat grains fell straight down. Later, Ritu helped her mother wash the wheat in water to remove any dust.

1) What method of separation was used first by Ritu's grandmother?

[Hint: Handpicking.]

2) Why did the chaff get blown away during winnowing?

[Hint: Because chaff is lighter than wheat grains, wind carries it away while heavier wheat grains fall straight down.]

3) After winnowing, what method was used to remove dirt from wheat? Define the methods.

[Hint: Washing in water (sedimentation and decantation)]

[The process of settling down of heavier insoluble components at the bottom of a liquid is called sedimentation. When the water (liquid) is removed by tilting the vessel, the process is called decantation.]

### **ANSWERS FOR OBJECTIVE TYPE QUESTIONS (1 to 10)**

**1. (b) 2. (b) 3. (a) 4. (d) 5. (b) 6. (c) 7. (c) 8. (iv) 9. (iii) 10. (i)**

<i>Prepared by:</i> <i>Ms Alysia Fernandes</i>	<i>Checked by:</i> <i>HOD Science</i>
---	--