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Methods of Separation in Everyday Life

A. Multiple Choice Questions.

- The method of separation used to separate stones from rice is
 - Hand-picking
 - Winnowing
 - Threshing
 - All of these
- A farmer removing the husk from wheat after cutting the crop
 - Hand-picking
 - Decantation
 - Threshing
 - Evaporation
- A method of separating heavier and lighter components of a mixture by wind is called
 - Hand-picking
 - Winnowing
 - Threshing
 - All of these
- What are prescribed as remedies?
 - Herbs
 - Shrubs
 - Sugar
 - Salt
- Pebbles and stones are removed from sand by _____.
 - Hand-picking
 - Threshing
 - Filtration
 - Sieving
- Which method is used to separate a mixture of salt and water?
 - Decantation
 - Sieving
 - Filtration
 - Evaporation
- In which state of India is common salt water lake located?
 - Maharashtra
 - Gujarat
 - Rajasthan
 - Odisha
- When two components of a solid mixture differ in particles size, which of the following method of separation is used?
 - Sedimentation
 - Evaporation
 - Decantation
 - Sieving
- Rainwater is a mixture of mud and water. It is purified to some extent by
 - Filtration
 - Sieving
 - Decantation
 - Distillation
- The _____ can be recycled and reused.
 - Petrol
 - Scrap iron
 - Mirror
 - Coal

B. Fill in the Blanks.

Thresher	scrap iron	sieve	Namak Satyagrah	mixture
Seawater	solid–solid	Iron	Hand-picking	hands

- Separating small stones and husk from the grains with _____.
- When two or more substances are mixed is called _____.
- _____ is a convenient method of separation.
- _____ machines are used for separating grains from the stalks and husk.

5. The bigger particles such as bran and small stones remain on the _____.
6. Sieving is used when components of a _____ mixture have different sizes.
7. In many industries, the waste material often contains _____.
8. In Sabarmati Ashram they learn about the _____ satyagrah.
9. _____ is a mixture of salts and some other substances dissolved in water.
10. _____ is a common example of a magnetic substance.

C. State true or false.

1. Winnowing is generally done with the help of water.
2. A mixture of milk & water can be separated by Decantation.
3. The process used to separate cream from curd is centrifugation.
4. Filtration is used to separate salt and water.
5. Decantation is generally preceded by sedimentation.
6. Air is a mixture of gases.
7. Winnowing is generally done with the help of water.
8. Rock salt is an impure substance.
9. Muslin cloth and charcoal can be used as filters.
10. The chemical used for loading is baking soda.

D. Answer the following questions.

1. What is separation?

Ans. _____

2. List various methods of separation of components from their mixtures.

Ans. _____

3. What is the basis of using hand-picking as a method of separation?

Ans. _____

4. How does Ayurveda use plants to treat illnesses?

Ans. _____

5. How will you separate water from petrol?

Ans. _____

6. Other than filter paper, name three materials that can be used as filters.

Ans. _____

E. Give reason.

1. Why do we need to separate different components of a mixture? Give two examples.

Ans. _____

2. Why is filtration used to separate a mixture of sand and water?

Ans. _____

3. Tea bags were initially made of soft cloth, like silk. why?

Ans. _____

4. why people are started using gauze or muslin for tea bag?

Ans. _____

5. Why is magnetic separation used to separate iron filings from a mixture?

Ans. _____

6. Why are herbs dried in the shade in Ayurveda?

Ans. _____

F. Match the Following.

Column A	Column B	Ans.
1. Shillong	i. A convenient method	a. _____
2. Thresher machines	ii. A bamboo tray	b. _____
3. Soop	iii. Made of filter paper	c. _____
4. Hand-picking	iv. The capital of Meghalaya	d. _____
5. Tea bags	v. Variety of grains piled up	e. _____
6. Courtyard	vi. Used for threshing and winnowing	f. _____

G. Give One-Word Answers.

1. A metal plate with holes, used for separating solid particles of different size. :- _____
2. Which tool is used for separating heavier and lighter components of a mixture in olden days. :- _____
3. Name the only common salt water lake in India :- _____
4. Namak (common salt) is obtained from :- _____
5. A container or machine in which cream or curd is agitated to separate butter :- _____
6. The traditional Indian system of holistic health and medicine is called :- _____

H. Define the following method.

1. Hand-picking:- _____

2. Threshing:- _____

3. Winnowing:- _____

4. Sieving:- _____

5. Evaporation:- _____

6. Sedimentation:- _____

7. Decantation:- _____

8. Churning:- _____

9. Filtration:- _____

10. Magnetic separation:- _____

J. Identify the different methods of separation.



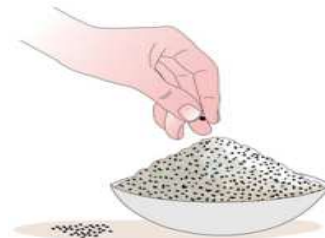
1. _____



2. _____



3. _____



4. _____

Answer

- A.
- | | | |
|-----------------|----------------|----------------|
| 1. Hand-picking | 5. Sieving | 9. Decantation |
| 2. Threshing | 6. Evaporation | 10. Scrap iron |
| 3. Winnowing | 7. Gujarat | |
| 4. Herbs | 8. Sieving | |
- B.
- | | | |
|-------------|---------------------|-------------|
| 1. hands | 5. sieve | 9. Seawater |
| 2. mixture | 6. solid-solid | 10. Iron |
| 3. Sieving | 7. Iron | |
| 4. Thresher | 8. Namak Satyagraha | |
- C.
1. False 2. True 3. True 4. False 5. True 6. True 7. False 8. True 9. True 10. False
- D.
- Separation is the process of separating different components of a mixture into pure substances.
 - Methods of separation include hand-picking, threshing, winnowing, sieving, evaporation, distillation, filtration, sedimentation, decantation, magnetic separation, and centrifugation.
 - Hand-picking is based on the differences in size, color, and shape of the components in a mixture.
 - Ayurveda uses plants to treat illnesses by extracting their medicinal properties through various methods, such as boiling, grinding, and fermentation.
 - Water from petrol can be separated using a separating funnel due to their different densities.
 - Other materials that can be used as filters include muslin cloth, cheesecloth, and coffee filters.
- E.
- We need to separate different components of a mixture to obtain pure substances with specific properties. For example, we separate sand from water to get pure water for drinking, and we separate iron filings from a mixture to obtain pure iron for industrial use.
 - Filtration is used to separate a mixture of sand and water because sand is insoluble in water and can be trapped by the filter paper, while the water passes through.
 - Tea bags were initially made of soft cloth, like silk, to allow the tea leaves to expand and release their flavour fully.
 - People started using gauze or muslin for tea bags because they are more breathable and allow the tea to steep more effectively than silk.
 - Magnetic separation is used to separate iron filings from a mixture because iron is a magnetic material and can be attracted to a magnet, while other components are not.
 - Herbs are dried in the shade in Ayurveda to prevent the loss of their medicinal properties due to direct sunlight, which can cause oxidation and decomposition.
- F.
- | | | | | | |
|-------|-------|-------|------|--------|------|
| 1. iv | 2. vi | 3. ii | 4. i | 5. iii | 6. v |
|-------|-------|-------|------|--------|------|
- G.
- | | | |
|------------------|-------------|-------------|
| 1. Sieve | 3. Kutch | 5. Churn |
| 2. Winnowing fan | 4. Seawater | 6. Ayurveda |
- H.
- Hand-picking: The process of manually selecting specific components from a mixture based on their appearance.
 - Threshing: The process of beating or rubbing grains to separate them from their stalks.
 - Winnowing: The process of separating lighter and heavier components of a mixture using wind or blowing air.
 - Sieving: The process of separating components of a mixture based on their particle size using a sieve.
 - Evaporation: The process of converting a liquid into a gas by heating it.
 - Sedimentation: The process of settling down of heavier insoluble components at the bottom of a liquid.
 - Decantation: The process of carefully pouring off the liquid from a mixture after the heavier components have settled.
 - Churning: The process of agitating a substance, often curd, to separate its components.
 - Filtration: The process of separating insoluble solid components from a liquid using a porous material.
 - Magnetic separation: The process of separating magnetic materials from a mixture using a magnet.
- I.
- | | | | |
|--------------|--------------|------------|-----------------|
| 1. Threshing | 2. Winnowing | 3. Sieving | 5. Hand-picking |
|--------------|--------------|------------|-----------------|