

## Separation of Substances

### Test

Time : 30 minutes

Maximum marks : 20

#### Instructions

- This test contains 20 questions.
- Each question has **FOUR** options (1), (2), (3) and (4). **ONLY ONE** of these four options are correct.
- For each question, marks will be awarded in one of the following categories:  
*Full Marks : +1* : If only correct answer is given.  
*Zero Marks : 0* : If no answer is given.  
*Negative Marks* : There is no negative marking.

#### Multiple choice questions

1. Process in which heavier components of a mixture settles down when water is added to it  
(1) decantation      (2) filtration      (3) sedimentation      (4) none of these
2. Iron is separated from the mixture of sulphur and iron by  
(1) winnowing      (2) handpicking      (3) sieving      (4) magnet
3. In summer ponds dries up by the process of  
(1) evaporation      (2) decantation      (3) condensation      (4) sedimentation
4. A mixture of sand and water can be separated by using  
(1) handpicking      (2) sedimentation & decantation  
(3) threshing      (4) none of these
5. Impurities present in water can be separated by  
(1) sieving      (2) filtration      (3) condensation      (4) winnowing
6. Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to the lemonade before or after dissolving sugar? In which case would it be possible to dissolve more sugar?  
(1) Add sugar before cooling  
(2) Add sugar after cooling  
(3) There will be no difficulty in dissolving sugar in either cold water or in hot water  
(4) On adding ice, the taste of the lemonade will change.
7. Mud is separated from muddy water by  
(1) condensation      (2) sedimentation      (3) filtration      (4) (2) & (3) both
8. Which of the following is/are element?  
(1) Iron      (2) Silver      (3) Oxygen      (4) All of these

9. Which among the following is homogeneous mixture?  
(1) Sand and water (2) Chalk powder and water  
(3) Oil and water (4) None of these
10. Heterogenous mixtures are  
(1) Have uniform composition  
(2) Do not have uniform composition  
(3) May or may not have uniform composition  
(4) None of these
11. Pure substance are those substances  
(1) Made of only one kind of particles (2) Cannot be separated by physical process  
(3) Can be separated by physical process (4) Both (1) and (2)
12. Two immiscible liquids are separated by  
(1) Evaporation (2) Winnowing (3) Filtration (4) Separating funnel
13. After churning when substance settles clear liquid  
(1) can be allowed to rest (2) can be allowed to form crystals  
(3) can be decanted off (4) can be evaporated
14. A solution is prepared by dissolving sodium chloride in water. It is called  
(1) non-aqueous solution (2) aqueous solution  
(3) alcoholic solution (4) heterogeneous solution
15. When more quantity of salt is added to saturated solution of salt, then it  
(1) settles down at the bottom of the container  
(2) remains suspended in the solution  
(3) starts evaporating  
(4) reacts with the solvent (water)
16. Solubility depends on  
(1) temperature (2) solute (3) both (1) and (2) (4) none of these
17. Methods used to separate a mixture of salt and sand is by treating the mixture with water and then  
(1) Filtration followed by evaporation (2) Cooling followed by evaporation  
(3) Filtration followed by condensation (4) None of the above.
18. The method of separating seeds of paddy from its stalks is called .....  
(1) Decantation (2) Winnowing (3) Threshing (4) Sedimentation
19. When milk, cooled after boiling, is poured onto a piece of cloth the cream (malai) is left behind on it. This process of separating cream from milk is an example of .....  
(1) Hand picking (2) Filtration (3) Churning (4) Sedimentation
20. Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called  
(1) Decantation (2) Filtration  
(3) Sedimentation followed by decantation (4) Evaporation

## Answer key

| Question | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |
|----------|----|----|----|----|----|----|----|----|----|----|
| Answer   | 3  | 4  | 1  | 2  | 2  | 1  | 3  | 4  | 4  | 2  |
| Question | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Answer   | 4  | 4  | 3  | 2  | 1  | 3  | 1  | 3  | 2  | 3  |

## Test solutions

## 1. Option (3)

When the heavier component in a mixture settles after water is added to it, the process is called sedimentation.

## 2. Option (4)

We can separate the components of the mixture by stirring the powder with a magnet; the iron filings will stick to the magnet while the sulphur will not.

## 3. Option (1)

During summer the land and water in ponds becomes hotter as a result more water rises up due to evaporation.

## 4. Option (2)

Sedimentation and decantation method is used for the separation of a mixture in which one component is a liquid and the other is an insoluble solid heavier than liquid.

## 5. Option (2)

Filtration is a process in which insoluble matter is separated from a liquid.

## 6. Option (1)

We should add ice after dissolving sugar because the dissolving power of water decreases with decrease in temperature.

## 7. Option (3)

The process for separation of mud from muddy water is filtration.

## 8. Option (4)

A substance that cannot be decomposed into simpler substances by ordinary chemical processes.

## 9. Option (4)

A homogeneous mixture is a mixture in which the composition is uniform throughout the mixture. The salt water is homogeneous because the dissolved salt is evenly distributed throughout the entire salt water sample.

## 10. Option (2)

A heterogeneous mixture is a mixture in which the composition is not uniform throughout the mixture. Vegetable soup is a heterogeneous mixture.

**11. Option (4)**

Pure substances are substances that are made up of only one kind of particles and cannot be separated by physical process. Pure substances are further classified as elements and compounds.

**12. Option (4)**

Immiscible liquids refer to the liquids that don't dissolve in each other and they can be separated by using a separating funnel.

**13. Option (3)**

After churning when substance settles at bottom clear liquid could be decanted off easily.

**14. Option (2)**

An aqueous solution is a solution in which the solvent is water.

**15. Option (1)**

Saturated solution cannot dissolve more quantity of solute at that temperature. The excess salt settles down and collects at the bottom of the container.

**16. Option (3)**

The solubility mainly depends on the composition of solute and solvent as well as on temperature and pressure.

**17. Option (1)**

First by filtration sand can be separated from the mixture of sand, salt and water. Then by evaporation the water will get evaporated leaving behind the salt.

**18. Option (3)**

The method of separating seeds of paddy from its stalks is called threshing.

**19. Option (2)**

When milk, cooled after boiling, is poured onto a piece of cloth, the cream (malai) is left behind on it. This process of separating cream from milk is an example of filtration.

**20. Option (3)**

Impurities settled at the bottom when muddy water was kept overnight in a bucket. The clear water was then poured off from the top. The process of separation used in this example is called sedimentation and decantation.