

Exercises

(A) Fill in the blanks :

1. Distillation
2. Sedimentation
3. Winnowing
4. Centrifugation
5. Solid
6. Threshing
7. Filtration
8. Evaporation
9. Sedimentation & Decantation
10. Magnetic Separation

(B) Pick the correct option:

1. Soil
2. Winnowing
3. Hand picking
4. Evaporation
5. Filtration

(C) Oxygen gas

(D) Sample D

(E) Diagram a,b and c

(F) Sand and iron filings

(G) Sea water

(H) liquids from Solids

(I) loading

(J) difference in heaviness of the components

(K) liquids

(L) obtaining soluble solutes

(M) magnetic and non-magnetic solids

(N) State whether the following statements are true or false:

1. False
2. True
3. True
4. True
5. True
6. False
7. False
8. False
9. False
10. False

(O) Select the odd one out:

1. Muddy water
2. Water

(P) Answer the following questions in short:

1. The matter which is made up of a single substance is called as pure substance. Examples : sugar and salt.
2. Condensation is defined as the process of changing water vapour or any other vapour into the liquid state on cooling.
3. Evaporation: process of converting a liquid into its vapour, by heating it below the boiling point of the liquid is called evaporation.  
Filtration: The process used to separate a solid from a liquid.
4. When the heavier components in a mixture settled after a water is added to it the process is called sedimentation. When the water (along with the dust) is removed, the process is called decantation.
5. Water is called as universal solvent because it can dissolve most of the substances in it. Also, it is essential for all living beings.

(Q) Answer the following questions in brief :

1. Salt is obtained by the process of evaporation. To obtain common salt from seawater is collected in open shallow pits during high tides. Slowly, on standing the water evaporates due to the heat of the sun. When the water evaporates completely, solid salt is left behind.
2. The first step is to pass the mixture through a filter paper. This will separate out a mixture of sand and iron filings from the solution. Iron filings is a magnetic material. While sand is a non-magnetic material. So, they can be easily separated using a magnet.
3. Sieving is a process by which fine particles are separated from bigger particles by using a sieve. It is used in flour mill or at construction sites. In flour mill, impurities like husks and stones are removed from wheat. Pebbles and stones are removed from sand by sieving.
4. The process of separating heavier and lighter components of a mixture by wind or by blowing air is called winnowing. This method is used by farmers to separate lighter husk particles from heavier seeds of grain. A farmers allows the mixture of grains and husk to fall down from a height due to difference in the weight of the components the grains, which is heavier components, falls down vertically and forms a heap while husk being the lighter component is carried away by the wind.
5. Two immiscible liquids oil and water, can be separated by using separating funnel. The mixture of oil and water forms to separate layers because they are completely insoluble in each other. Oil forms the upper layer while water forms lower.

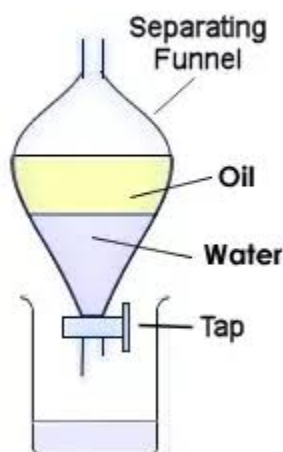


Fig: Immiscible liquids separated by using separating funnel

6. It is important to be able to separate mixtures to obtain a desired component from the mixture and to be able to better understand how is component.

Some methods used to separate a mixture are:

1. Sedimentation & Decantation : used for separating solids and liquids. Examples, separating mud and sand impurities from water.
  2. Centrifugation : used for separating very fine and tiny solids from liquid. Example, separating butter from cream.
  3. Filtration : used for separating and insoluble solid from a liquid. Example, separating sand from water.
  4. Evaporation : used to obtain the solute from a solution. Example, for obtaining salt from salt solution.
  5. Simple distillation : used to obtain the solvent from a solution. Example, for obtaining pure water from seawater.
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