Separation Chemistry Questions with Solutions

Q1. A solution which contains maximum possible amount of solute at any given temperature is known as
(a) Saturated solution
(b) Unsaturated solution
(c) Supersaturated solution
(d) None of the solutions
Answer: (a) A solution which contains maximum possible amount of solute at any given temperature is known as saturated solution.

Q2. The process of separating grains from chaff is known as
(a) Hand picking
(b) Winnowing
(c) Threshing
(d) None of the above
Answer: (b) The process of separating grains from chaff is known as winnowing.

Q3. The process of separating common salt from its solution is known as
(a) Decantation
(b) Evaporation
(c) Sedimentation
(d) None of the above
Answer: (b) The process of separating common salt from its solution is known as evaporation.

Q4. The process of settling down of heavier, insoluble particles in an undisturbed mixture solution is known as
(a) Sedimentation
(b) Filteration
(c) Decantation
(d) None of the above
Answer: (a) The process of settling down of heavier, insoluble particles in an undisturbed mixture solution is known as sedimentation.

Q5. Which is the correct order to separate salt from a mixture of salt and sand?
(a) Dissolving, Evaporation, and Filtration
(b) Evaporation, Dissolving, and Filteration
(c) Dissolving, Filtration, and Evaporation

(d) None of the above
Answer: (c) The correct order to separate salt from a mixture of salt and sand is Dissolving, Filtration, and Evaporation.

Q6. What do you mean by the term separation?
Answer: Separation is a method or process used to separate two substances that once formed a mixture.

Q7. Differentiate between separation by distillation and separatory funnel.
Answer: We can differentiate between separation by distillation and separatory funnel in the following ways.

S. No.	Separation by distillation	Separation by separatory funnel
1.	It is employed for separation of two miscible liquids.	It is employed for separation of two immiscible liquids.
2.	It is based on the difference in the boiling points of two liquids.	It is based on the difference in the densities of two liquids.

Q8. Name any two seperatory techniques that can be used to separate solid-solid mixtures.
Answer: We can separate solid-solid mixtures by using the following methods.
1. Hand picking
2. Winnowing

Q9. What do you mean by the term sieving? Where is it employed?
Answer: Sieving is a separtory technique used to separate fine particles 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. In construction sites, pebbles and stones are removed from sand by sieving.

Q10. What do you mean by the term winnowing? Where is it employed?
Answer: Winnowing is a separtory technique used to separate heavier and lighter components of a mixture by wind or by blowing air. It is used by farmers to separate lighter husk particles from heavier seeds of grain.

Q11. Name the technique used to separate
(a) Cream from milk
(b) Salt from water
(c) Camphor from sand
(d) Oil from water

Answer: (a) The technique used to separate cream from milk is centrifugation.
(b) The technique used to separate salt from water is distillation.
(c) The technique used to separate camphor from sand is sublimation.
(d) The technique used to separate oil from water is decanattion.

Q12. How can you separate sand and water from their mixture?
Answer: We can separate sand and water from their mixture by using sedimentation and decantation method. Foremost, we will leave the sand water mixture for a while. Later, we will pour the sand water mixture in another container. We will see that the mixture is separated. The sand particles being heavier will settle down at the bottom of the container.

Q13. Name the method that can be used for separating the following mixtures.
(a) Sand and husk
(b) Wheat, sugar, and silk
(c) Water and petrol
(d) Rice and salt
(e) Sand and salt
Answer:
(a) The method that can be used for separating sand and husk is winnowing.
(b) The method that can be used for separating wheat, sugar, and silk is winnowing.
(c) We can separate water and petrol by using seperatory funnel.
(d) The method that can be used for separating rice and salt is sieving.
(e) The method that can be used for separating sand and salt is sedimentation and decantation followed by filtration.

Q14. How will you differentiate between homogenous and heterogeneous mixtures?
Answer:

S. No.	Homogenous Mixture	Heterogenous Mixture
1.	It has a uniform composition and appearance.	It has a non-uniform composition and appearance.
2.	It cannot be visually differentiated.	It can be distinctly observed.
3.	Example: Olive oil, steel, salt in water	Example: Salad, trail mix
4.	Components of homogeneous mixture cannot be separated easily.	Components of heterogenous mixture can be separated easily.

Q15. Match the following.

Column A	Column B
Sand from a mixture of sand and water	Fractional distillation
Alcohol from a mixture of methyl alcohol and water	Distillation
Kerosene from a mixture of kerosene and water	Filtration
Pure water from impure water	Sublimation
Naphthalene from a mixture of naphthalene and lead chloride	Separating funnel

Answer:

Column A	Column B
Sand from a mixture of sand and water	Filtration
Alcohol from a mixture of methyl alcohol and water	Fractional distillation
Kerosene from a mixture of kerosene and water	Separating funnel
Pure water from impure water	Distillation
Naphthalene from a mixture of naphthalene and lead chloride	Sublimation

Practise Questions on Separation

Q1. What are chemical methods of separation?
Answer: Distillation, crystallisation, adsorption, membrane procedures, absorption and stripping, and oxidation are some common chemical methods of separation.

Q2. Where is decantation used? Give an example.

Answer: Decantation is used to separate insoluble solids or liquid from liquid. Rain water is a mixture of mud and water. It is purified by using decantation. Moreover, oil and water also get separated by this method as oil floats up on the surface.

Q3. What happens when a saturated solution is cooled?
Answer: A solution that contains the maximum amount of solute at a given temperature is known as a saturated solution, and the amount of solute present in a saturated solution at a given temperature is called solubility.
Solubility of a solution is directly proportional to the temperature. So, when temperature decreases, solubility also decreases. On cooling the saturated solution, its solubility decreases which result in the separation of some of the dissolved substance or solute in the solid crystal form.

Therefore, the solution becomes supersaturated.

Q4. What is a saturated solution?
Answer: A solution which contains maximum possible amount of solute at any given temperature is known as saturated solution.

Q5. Explan the significance of separation.
Answer: Separation is a method or process used to separate two substances that once formed a mixture. It plays a crucial role in our everyday life. It is used to
1. Get two or more useful products.
2. Remove impurities from the useful product or remove the harmful substances from the useful substances.