

Mixtures Chemistry Questions with Solutions

Q1. Which of the following best describes a chemical mixture?

- a) A compound made from different elements
- b) A substance made through chemical bonding
- c) When two substances are combined but are not chemically bonded
- d) All of the above
- e) None of the Above

Correct Answer. (c)

Q2. Which of the following is NOT a property of a mixture?

- a) The components can be easily separated
- b) The original properties of the combined substances are changed
- c) The proportion of the components is variable
- d) Two or more substances are combined
- e) All of the Above

Correct Answer. (b)

Q3. Which of the following is an example of a homogeneous mixture?

- a) Saltwater
- b) Blood
- c) Metal alloys
- d) Air
- e) All of the Above

Correct Answer. (e)

Q4. In what type of mixture are the substances evenly distributed throughout the mixture?

- a) Homogeneous
- b) Heterogeneous
- c) All types of mixtures
- d) No types of mixtures

Correct Answer. (a)

Q5. What type of mixture is steel?

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- a) Alloy
- b) Suspension
- c) Solution
- d) Colloid
- e) Heterogeneous

Correct Answer. (a)

Q6. State True or False. Only specific compounds can be combined to form mixtures.

Answer. False

Q7. Define mixture.

Answer. When two or more substances mix without undergoing any chemical change, the resulting substance is referred to as a Mixture in chemistry.

The result of the combination of substances does not lose its uniqueness, nor are they chemically combined. A mixture is the end result of mechanically blending or mixing chemical substances such as elements and compounds.

Q8. Define colloid.

Answer. A colloidal solution appears homogeneous to the naked eye, but particles can be seen under a microscope. The size of the particles ranges from 1 nanometer to 1 micrometre. Colloids, like solutions, are physically stable. They demonstrate the Tyndall effect. Decantation cannot be used to separate colloid components; however, centrifugation can. Hair spray (gas), smoke (gas), whipped cream (liquid foam), and blood are all examples of colloids (liquid).

Q9. Give an example for each of the following:

- a) Solid-liquid homogeneous mixture
- b) Gas-gas homogeneous mixture
- c) Liquid-liquid heterogeneous mixture

Answer.

- a) salt in water
- b) Air
- c) Water and oil

Q10. Write your observation when the following processes take place:

- a) An aqueous solution of sugar is heated till it gets dried up.
- b) A saturated solution of KCL at 60° C is allowed to cool at room temperature.

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- c) A mixture of iron filings and sulphur powder is heated strongly.
- d) A beam of light is passed through a colloidal solution.
- e) Dilute HCI is added to a mixture of iron filings and sulphur powder.

Answer.

- a) When a sugar aqueous solution is heated to dryness, the sugar is left behind in the container after the water vaporises.
- b) In the liquid solution, we would see crystals of potassium chloride forming.
- c) There will be the formation of iron sulphide (FeS).
- d) The light is scattered, and this is known as the Tyndall effect.
- e) It will separate S and Fe, resulting in the formation of H₂S gas and iron chloride (FeCl₂)

Q11. Identify the following as homogeneous or heterogeneous matter.

- a) Gasoline
- b) Dirt
- c) Smog
- d) Alcohol
- e) Iron nail
- f) Vinegar
- g) Aerosol spray
- h) Air
- i) Seawater
- j) Steel

Answer.

- a) Gasoline homogeneous
- b) Dirt heterogeneous
- c) Smog heterogeneous
- d) Alcohol homogeneous
- e) Iron nail heterogeneous
- f) Vinegar homogeneous
- g) Aerosol spray
- h) Air homogeneous
- i) Seawater heterogeneous
- j) Steel homogeneous

Q12. What are some of the common techniques used in separating mixtures?

Answer. Some of the common techniques used in separating mixtures are as follow:

- Separating funnel
- Chromatography
- Evaporation
- Simple distillation



- Fractional distillation
- Centrifugation

Q13. What are the properties of mixtures?

Answer. The various properties of mixtures are discussed further below.

- A mixture's constituents do not exist in a fixed ratio.
- Although there is no chemical force acting between the two or more substances that are mixed, they still coexist.
- They can be either heterogeneous or homogeneous.
- The proportions of the substances vary indefinitely.
- The mixture's properties are determined by the individual components.
- Physical methods can be used to separate the mixture's constituents.
- The boiling and melting points of the mixture are determined by the properties of the constituents.
- There is no change in energy during the formation of a mixture.
- Mixtures can be formed by combining all states of matter (solids, liquids, and gases).

Q14. Give the difference between Homogeneous and Heterogeneous mixtures.

Answer. The difference between a Homogeneous mixture and a Heterogeneous mixture is as follows-

Homogeneous mixture	Heterogeneous mixture
It has a uniform composition	It has a non-uniform composition
It has only one phase	There are two or more phases
It can't be separated out physically	It can be separated out physically
'homo' means the same	'hetero' means different
Example: a mixture of alcohol and water	Example: a mixture of sodium chloride and sand

Q15. What is the difference between mixture and solution?

Answer. The difference between mixture and solution is s follows-

Mixture	Solution



In a mixture, substances are generally just mixed and are not completely dissolved.	In a solution, substances are dissolved completely and they cannot be filtered out.
The mixture comprises two or three compounds that aren't fused chemically. They have no physical interactions.	A solution contains two substances that are chemically mixed to form a new compound.
The chemical properties of each substance are retained without change.	Chemical properties usually change.
The amount of substances in a mixture can vary and amounts don't have a fixed ratio.	A solution usually has a fixed ratio or amount of substances.
Mixtures can be classified primarily into two groups, namely homogeneous mixtures and heterogeneous mixtures.	A solution is a type of homogeneous mixture.

Practise Questions on Mixtures

Q1. A combination of a liquid and a solid in which the solid does not dissolve:

- a) Alloy
- b) Solution
- c) Compound
- d) Colloid
- e) Suspension

Correct Answer. (e)

Q2. State the separation technique used for the separation of the following:

- a) Ammonium chloride from a mixture containing sodium chloride and ammonium chloride
- b) Copper sulphate from its solution in water.

Answer.

- a) Sublimation
- b) Crystallization

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Q3. List the two conditions essential for using distillation as a method for the separation of the components from a mixture.

Answer. The two conditions essential for using distillation as a method for separation of the components from a mixture are-

(i) The mixture's components must be miscible with one another.

(ii) If both miscible components are liquids, their boiling points must differ by more than 25 ° C.

Q4. Seawater can be classified as homogeneous as well as a heterogeneous mixture.' Comment.

Answer. The seawater contains a mixture of salt and other larger impurities, as well as a mixture of several gases. Seawater is classified as a heterogeneous mixture due to larger impurities, whereas seawater is classified as a homogeneous mixture due to a mixture of several gases and salt.

Q5. Name the separation technique you would follow to separate ning AP

- (i) Dyes from black ink.
- (ii) A mixture of salt and ammonium chloride
- (iii) Cream from milk
- (iv) Sodium chloride from its solution in water

Answer.

- (i) chromatography
- (ii) sublimation
- (iii) centrifugation
- (iv) evaporation