

CLASS 9 SCIENCE

CHAPTER 5 • EXPLORING MIXTURES AND THEIR SEPARATION

MCQs • Multiple-Choice Practice

1. A mixture in which the composition is uniform throughout is called:

- A. Heterogeneous mixture
- B. Homogeneous mixture
- C. Suspension
- D. Colloid

3. A mixture of sand and water is:

- A. Homogeneous
- B. Heterogeneous
- C. A solution
- D. A pure substance

5. The substance that is dissolved in a solution is called the:

- A. Solvent
- B. Solute
- C. Medium
- D. Filtrate

2. Which is an example of a homogeneous mixture?

- A. Sand and water
- B. Oil and water
- C. Sugar and water
- D. Muddy water

4. In a solution, the substance that dissolves another substance is called the:

- A. Solute
- B. Solvent
- C. Residue
- D. Dispersed phase

6. A solution is generally:

- A. Heterogeneous
- B. Homogeneous
- C. Always a suspension
- D. Always a colloid

CLASS 9 SCIENCE

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7. Which mixture contains particles that are visible to the naked eye and can settle on standing?

- A. Solution
- B. Suspension
- C. Pure liquid
- D. Homogeneous mixture

9. Which is an example of a suspension?

- A. Salt solution
- B. Sawdust in water
- C. Vinegar
- D. Soda water

11. The scattering of light by dispersed particles is called the:

- A. Doppler effect
- B. Tyndall effect
- C. Greenhouse effect
- D. Photoelectric effect

8. A suspension is best described as a mixture in which:

- A. Solid particles dissolve completely
- B. Undissolved particles remain suspended in a medium
- C. No particles are present
- D. All particles are molecular in size

10. A colloid differs from a true solution because colloidal particles:

- A. Are always visible to the naked eye
- B. Can scatter light
- C. Always settle immediately
- D. Are completely absent

12. Which mixture generally does NOT show the Tyndall effect?

- A. Colloid
- B. Suspension
- C. True solution
- D. Milk

CLASS 9 SCIENCE

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13. Concentration expressed as mass by mass percentage tells us the mass of solute present in:

- A. 10 g of solution
- B. 100 g of total solution
- C. 100 mL of solvent
- D. 1 L of water

15. A saturated solution at a particular temperature contains:

- A. No solute
- B. The maximum amount of solute that can dissolve at that temperature
- C. Only solid solute
- D. Only solvent

17. A graph of solubility against temperature is called a:

- A. Distance curve
- B. Solubility curve
- C. Velocity curve
- D. Heating graph

14. Mass by volume percentage tells us the mass of solute present in:

- A. 100 mL of solution
- B. 100 g of solvent
- C. 1 g of solution
- D. 10 mL of solution

16. Solubility is generally affected by:

- A. Temperature
- B. Colour only
- C. Shape of container only
- D. Sound

18. When a hot saturated solution is cooled slowly, excess dissolved solute may:

- A. Disappear
- B. Separate out as crystals
- C. Become a gas
- D. Turn into solvent

CLASS 9 SCIENCE

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19. Crystallization is used to obtain:

- A. A pure solid from a saturated solution
- B. A gas from a liquid
- C. Two immiscible liquids
- D. A suspension from a solution

20. Which method can be used to separate pigments in a flower?

- A. Paper chromatography
- B. Separating funnel
- C. Centrifugation only
- D. Sedimentation only

21. Paper chromatography separates compounds mainly because they:

- A. Have different rates of movement on the paper
- B. Have the same solubility
- C. Have identical densities
- D. Are all solids

22. Distillation can be used to separate:

- A. Two immiscible solids
- B. A liquid from a mixture based on differences in boiling points
- C. Sand from iron filings only
- D. Two identical liquids

23. In simple distillation, the component with the lower boiling point generally:

- A. Condenses first
- B. Never evaporates
- C. Remains permanently in the flask
- D. Becomes a solid first

24. A separating funnel is used to separate:

- A. Two immiscible liquids
- B. Two miscible liquids
- C. Two dissolved salts
- D. Pigments

CLASS 9 SCIENCE

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25. Oil and water form separate layers because they are:

- A. Miscible
- B. Immiscible
- C. Saturated
- D. Colloidal solids

26. In a separating funnel, the lower layer is usually drained first through the:

- A. Condenser
- B. Stopcock
- C. Thermometer
- D. Filter paper

27. Sublimation is the change of a solid directly into:

- A. Liquid
- B. Vapour
- C. Plasma
- D. Solution

28. Which pair can be separated using sublimation if one component sublimes?

- A. Naphthalene and sand
- B. Salt and water
- C. Oil and water
- D. Sugar and water

29. Centrifugation separates components by:

- A. Rapid spinning
- B. Heating only
- C. Freezing
- D. Chromatography

30. During centrifugation, heavier particles generally:

- A. Move outward and settle
- B. Remain permanently at the top
- C. Evaporate
- D. Dissolve completely

ANSWER KEY

Chapter 5 • Exploring Mixtures and their Separation

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	C	3	B	4	B	5	B
6	B	7	B	8	B	9	B	10	B
11	B	12	C	13	B	14	A	15	B
16	A	17	B	18	B	19	A	20	A
21	A	22	B	23	A	24	A	25	B
26	B	27	B	28	A	29	A	30	A

Quick Revision: Homogeneous & heterogeneous mixtures • Solutions • Suspensions • Colloids • Concentration • Solubility • Crystallization • Distillation • Chromatography • Separating funnel • Sublimation • Centrifugation • Tyndall effect