

Science | Worksheet | Grade IX
Is Matter around us pure?

- Two students A and B were given 10 ml of water in a bowl and a plate respectively. They were told to observe the rate of evaporation. Name the student whose water evaporates faster and explain its reason.
- A solution contains 40 g of common salt in 320 g of water. Calculate the concentration in terms of mass by mass percentage of the solution.
- Why the inter-conversion of states of matter is considered as a physical change? Give three reasons to justify your answer.
- (a) Name the separation technique you would follow to separate
 - Dyes from black ink.
 - A mixture of salt and ammonium chloride
 - Cream from milk
 - Sodium chloride from its solution in water(b) State the principle used in separating a mixture of two immiscible liquids.
- Define solubility. How does solubility of a solid in water change with temperature?
- How many litres of 15% (mass/ volume) sugar solution would it take to get 75 g of sugar?
- During an experiment the students were asked to prepare a 10 % (Mass/ Mass) solution of sugar in water. Ramesh dissolved 10 g of sugar in 100 g of water while Sarika prepared it by dissolving 10 g of sugar in water to make 100 g of the solution.
 - Are the two solutions of the same concentration?
 - Compare the mass % of the two solutions.
- Calculate the mass of sodium sulphate required to prepare its 20% (mass percent) solution in 100 g of water.
- Give an example for each of following:
 - Solid-liquid homogeneous mixture
 - Gas-gas homogeneous mixture
 - Liquid-liquid heterogeneous mixture
- Distinguish between homogeneous and heterogeneous mixtures. Classify the following mixtures as homogeneous and heterogeneous:
 - Tincture of iodine
 - Smoke
 - Brass
 - Sugar solution
- A teacher told three students A, B and C to prepare 25% solution (mass by volume) of KOH. Student A dissolved 25 g of KOH in 100 g of water, student B dissolved 25 g of KOH

in 100 mL of water and student C dissolved 25 g KOH in water and made the volume 100 mL. Which one of them has made required 25% solution? Give your answer with reason.

12. Calculate the mass of water and mass of glucose required to make 250 g of 40% solution of glucose.

13. 'Colloidal solution appears to be homogeneous but actually it is heterogeneous.' Give justification for this statement.

14. When a fine beam of light enters a room through a small hole, Tyndall effect is observed. Why does this happen? Give one more example where this effect can be observed.

15. With the help of a flow diagram, show the process of obtaining different gases from air. if the boiling point of oxygen, argon and nitrogen are 183°C , -186°C and -196°C respectively, which gas gets liquefied first as the air is cooled?

16. Differentiate between miscible and immiscible liquids. Give an example of each.

17. Write the role of following in water purification system:

(a) Sedimentation Tank (b) Loading tank (c) Chlorination tank

18. Crystallization is better technique than simple evaporation technique. Justify this statement by giving two reasons.

19. (i) Name a technique to separate a mixture of two or more miscible liquids for which difference in boiling points is less than 25 K.

(ii) Describe the structure of the column used in the above technique. Why is it used?

20. When do we use the process of centrifugation? State the principle involved in this process. List its any two applications in our daily life.

21. A mixture contains two liquids A and B, which differ in their boiling points by 20 K. suggest a suitable process to separate them. Draw a neat labeled diagram to explain this process.

22. Define distillation. What type of mixture can be separated by distillation?

23. State any three differences between a mixture and a compound.

24. How will you separate a mixture of common salt, camphor and iron filings. Describe the process.