

Class: VIII
Subject: Chemistry
Topic: Is matter around us pure
No. of Questions: 20

1. List the points of differences between homogeneous and heterogeneous mixtures.

Ans: A homogeneous mixture is a mixture having a uniform composition throughout the mixture. For example:

salt in water, sugar in water, copper sulphate in water

A heterogeneous mixture is a mixture having a non-uniform composition throughout the mixture. For example: sodium chloride and iron fillings, salt and sulphur, oil and water

2. Classify each of the following as a physical or a chemical change. Give reasons.

(a) Drying of a shirt in the sun.

Ans: Drying of shirt in the sun is a physical change. Since in this change no new substance is formed.

(b) Rising of hot air over a radiator.

Ans: Since, in rising of hot air over a radiator no new substance is formed, hence it is a physical change.

(c) Burning of Kerosene in a lantern.

Ans: While burning of kerosene in a lantern carbon dioxide, and water vapour is formed. Hence it is a chemical change.

(d) Change in the colour of black tea on adding lemon juice to it.

Ans: In this change a new substance is formed, hence it is a chemical change.

3. Most elements are

- A. Solids
- B. Liquids
- C. Gases
- D. Mixtures

Ans (a)

4. How are sol, solution and suspension different from each other?

Ans: Sol is a heterogeneous mixture. In this mixture, the solute particles are so small that they cannot be seen with the naked eye. Also, they seem to be spread uniformly throughout the mixture. The Tyndall effect is observed in this mixture. For example: milk of magnesia, mud solution is a homogeneous mixture. In this mixture, the solute particles dissolve and spread uniformly throughout the mixture. The Tyndall effect is not observed in this mixture. For example: salt in water, sugar in water, iodine in alcohol, alloy suspensions are heterogeneous mixtures. In this mixture, the solute particles are visible to the naked eye, and remain suspended throughout the bulk of the medium. The Tyndall effect is observed in this mixture. For example: chalk powder and water, wheat flour and water

5. Arun has prepared 0.01% (by mass) solution of sodium chloride in water. Which of the following correctly represents the composition of the solutions?
- A. 1.00 g of NaCl + 100g of water
 - B. 0.11g of NaCl + 100g of water
 - C. 0.01 g of NaCl + 99.99g of water
 - D. 0.10 g of NaCl +99.90g of water

Ans: (c) 0.01 g of NaCl + 99.99 g of water

6. Emulsion is a colloidal solution of liquid in
- A. Solid
 - B. Liquid
 - C. Gas
 - D. Air

Ans (b)

7. To make a saturated solution, 36 g of sodium chloride is dissolved in 100 g of water at 293 K. Find its concentration at this temperature.

Ans: Mass of solute (sodium chloride)= 36 g (Given)

Mass of solvent (water)= 100 g (Given)

Then, mass of solution = Mass of solute + Mass of solvent = (36 + 100)g

Therefore, concentration (mass by mass percentage) of the solution

$$= \frac{\text{Mass of solute}}{\text{Mass of solvent}} \times 100\%$$

$$= \frac{36}{136} \times 100\%$$

$$= 26.47\%$$

8. Calculate the mass of sodium sulphate required to prepare its 20% (mass percent) solution in 100g of water?

Ans: In a 20% solution containing 100 g water; the mass percentage of water = $100 - 20 = 80\%$

∴ 80 % of solution is 100 gram

∴ 100 % of solution is $\frac{100}{80}$ gram

∴ 20% of solution is $\frac{100}{80} \times 20 = 25$ gram

Hence to prepare 20% (w/w) solution in 100 gram of water 25 gram of sodium sulphate is needed.

9. Shaving cream is colloidal solution of
- A. Gas in liquid
 - B. Liquid in liquid
 - C. Solid in liquid
 - D. Gas in solid

Ans (a)

10. Name the technique to separate
- (i) Butter from curd
 - (ii) Salt from sea-water
 - (iii) Camphor from salt

Ans:

- (i) Butter can be separated from curd by centrifugation.
- (ii) Salt can be separated from sea-water by evaporation.
- (iii) Camphor can be separated from salt by sublimation.

11. What type of mixtures is separated by the technique of crystallization?

Ans: By the technique of crystallization, pure solids are separated from impurities. For example, salt obtained from sea is separated from impurities, crystals of alum (Phitkari) are separated from impure samples.

12. The size of particles in a solution is

- A. Smaller than 10^{-7} cm
- B. Bigger than 10^{-5} cm
- C. Between 10^{-5}
- D. Less than 10^{-5} cm.

Ans (a)

13. What are the favourable qualities given to gold when it is alloyed with copper or silver for the purpose of making ornaments?

Ans: Since, gold is a highly malleable metal so it is difficult to make the ornaments with pure gold, thus to make its rigidity desiring gold is alloyed with copper or silver for making of ornaments.

14. Identify the solutions among the following mixtures:

- A. Soil
- B. Sea water
- C. Air
- D. Coal
- E. Soda water

Ans: The following mixtures are solutions:

- b. Sea water
- c. Air
- d. Soda water

15. Which of the following method is used for separation of different components of petroleum?

- (A) Fractional distillation
- (B) Sublimation
- (C) Chromatography
- (D) Simple distillation

Ans (a)

16. Suggest separation technique (s) one would need to employ to separate the following mixtures.

- (a) Mercury and water

Ans: The technique of Filtration

- (b) Potassium chloride and ammonium chloride
Ans: Sublimation
- (c) Common salt. Water and sand
Ans: Sedimentation, decantation, filtration and evaporation
- (d) Kerosene oil, water and salt
Ans: First filtration using separation funnel then after, vapourisation.

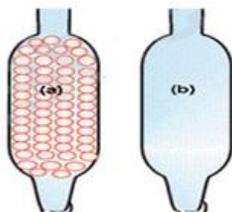
17. Which of the following are chemical changes?

- (a) Growth of a plant
- (b) Rusting of iron
- (c) Mixing of iron fillings and sand
- (d) Cooking of food
- (e) Digestion of food
- (f) Freezing of water
- (g) Burning of candle

Ans: The following changes are chemical changes:

- (A) growth of a plant
- (B) rusting of iron
- (D) cooking of food
- (E) digestion of food
- (G) burning of candle

18. Which of the tubes in Figure given here (a) and (b) will be more effective as a condenser in the distillation apparatus?



Ans: Figure (a) will be more effective, because of containing fractionating column.

19. A mixture of ammonium chloride and sodium chloride can be separated by

- (A) chromatography
- (B) hand picking
- (C) by sublimation
- (D) centrifugation

Ans (c)

20. What would you observe when

- (a) A saturated solution of potassium chloride prepared at 60°C is allowed to cool to room temperature.

Ans: Since the solution is a saturated solution, and prepared at 60°C which is above the room temperature, therefore, while it is allowed to cool at room temperature some of the potassium chloride will settle down at the bottom, because saturation decreases with decrease in temperature.

- (b) An aqueous sugar solution is heated to dryness.

Ans: When an aqueous solution of sugar is heated to dryness, the sugar will be left behind in the container after the vaporization of water. The sugar left in the container may be charred because of more heating.