

DR. M.K.K. ARYA MODEL SCHOOL

ASSIGNMENT

CLASS-9<sup>th</sup> (Is Matter Around Us Pure?)

ONE MARK QUESTION

1. Which will boil at a higher temperature ; tap water or sea water ?

Ans. Sea water. Because impurities raise the boiling water.

2. What will happen to melting point of ice if some common salt is added to it ?

Ans. Impurities lower the melting point, i.e ice will melt.

3. Give two examples of metalloids.

Ans. Silicon and Germanium.

4. Give an example of solution in which solid is a solute as well as the solvent.

Ans. Alloys are solid in solid solution

5. what is the particle size of a colloidal solution ?

Ans. 1-100 nm

6. A mixture contains naphthalene and sodium chloride ? Suggest a method for their separation.

Ans. By sublimation since naphthalene is sublimable but sodium chloride is non volatile.

7. Name the component present in steel.

Ans. Steel is a homogeneous mixture of iron and carbon

8. What will be the correct order for true solution colloidal solution and suspension in the order of their increasing stability ?

Ans. suspension < colloidal solution < true solution

9. Can we separate a mixture of alcohol and water by a separating funnel ?

Ans. No, the two liquids are miscible.

10. What is iodised salt ?

Ans. Iodised salt is a heterogeneous mixture of sodium chloride and potassium iodide

11. Name non-metal which is known to form the largest no. of compounds.

Ans. Carbon forms a large no. of organic compounds.

12. Why path of light is not visible in a solution when a beam of light is passed through it?

Ans. It is because the size of solute particles is very small and they do not scatter light.

13. "Tyndall effect can be observed when sunlight passes through the canopy of dense forest". Explain how this occurs.

Ans. This is because forest contains mist which in turn contains tiny droplets of water that act as particles of colloids dispersed in air.

14. What happens when a saturated solution is heated?

Ans. Crystals will be formed.

15. Define distillation.

Ans. When a liquid is converted into its vapours and condensing the vapour back into liquid is known as distillation.

16. What is meant by concentration of a solution?

Ans. The amount of solute present in given amount (mass or volume) of a solution is known as concentration of a solution.

### TWO OR THREE MARKS QUESTIONS

1. What is "tincture of iodine" ?

Ans. A solution of iodine in alcohol is known as “tincture of iodine”. It has antiseptic properties.

2. Can a mixture of sulphur and carbon disulphide show tyndall effect ?

Ans. No, the given mixture is homogeneous and can not show tyndall effect.

3. What are alloys ? Give some examples of alloys.

Ans. Alloys are homogeneous mixture of two metals

Examples- steel , brass , german silver etc.

4. What is tyndall effect ?

Ans. The scattering of a beam of light by colloidal particles is called tyndall effect.

Mixture of water and milk shows tyndall effect.

5. Define Brownian movement ?

Ans. when colloidal particles are placed under an ultramicroscope , they are seen to be continuously moving in a zig-zag path. This continuous zig-zag movement of colloidal particles is called Brownian movement.

6. What is centrifugation ?

Ans. This technique is based upon the principle that when a mixture is rotated at a high speed , the larger particles stay on the surface while the heavier particles are forced to the bottom of the liquid.

Applications -1. To separate butter from cream

2. In washing machine to squeeze out water from wet clothes.

7. What is crystallisation ?

Ans. crystals are the purest form of a substance. The process by which an impure compound is converted into its crystals is known as crystallisation.

Crystallisation is one of the most commonly used techniques for purification of organic/ inorganic solid.

8. Write three advantages of crystallization over evaporation.

Ans. 1. It forms crystals of pure substances.

2. it takes less time than evaporation.

3. it leads to formation of pure substances.

9. what is the effect of temperature on the rate of solubility?

Ans. 1. Solubility increases with increase in temperature in case of solid dissolved in liquid.

2. Solubility decreases with increase in temperature in case of gas dissolved in liquid

10. Write down the processes involved in sequential order to get the supply of drinking water to your home from the waterworks.

Ans. a. Reservoir

b. sedimentation tank

c. loading tank

d. filtration tank

e. chlorination

11. Distinguish between miscible and immiscible liquids. Name the technique used to separate these liquids.

Ans. **Miscible liquids** - liquids which mix with each other completely.

Technique for separation - Separating funnel

**Immiscible liquids** – liquids which do not mix with each other completely. Technique for separation - Distillation / Fractional distillation.

12. Why blood is a mixture and graphite is an element?

Ans. Blood is a mixture because its components can be separated by physical methods and they vary from person to person.

Graphite is an element because it is made-up of only one kind of atom and it cannot be broken into simpler substances.

13. Enumerate any two difference between simple distillation and fractional distillation.

Ans. **Simple Distillation**- 1. To separate a mixture of two or more miscible liquids for which difference in boiling point is more than 25K

2. Fractionating column is not used

**Fractional distillation**-.1. To separate two or more miscible liquids for which difference in boiling point in boiling point is less than 25K.

2. Fractionating column is used.

14. Can physical and chemical change occur together? Illustrate your answer.

Ans. Yes, burning of candle is the example where physical and chemical change occur together. the wax present in the candle changes to liquid state, it is physical change and at the same time , it gives carbon dioxide and water vapour on burning hence it is chemical change.

15.Both smoke and fog are aerosols . In what way they are different?

Ans. smoke and fog differ in dispersed phase . In smoke, dispersed phase is solid and in fog, dispersed phase is liquid while the dispersing medium is gas in both of them.

#### FIVE MARKS QUESTIONS

1. Differentiate between solution, colloids and suspension.
2. List differences between metal and non- metal.
3. Draw a labelled diagram showing the process of fractional distillation.
4. Draw a labelled diagram to show separation of dyes in black ink using chromatography method.