Short Answer Type Questions – I

[2 marks]

Q. 1· 'Sea water can be classified as homogeneous as well as heterogeneous mixture." Comment.

Ans. Sea water is a mixture of salts and water which cannot be separated except by evaporation.Therefore, sea water is considered homogeneous.
Sea water also contains mud, decayed plant, etc., other than salts and water, so it is heterogeneous also.

Q. 2. Why is it not possible to distinguish particles of a solute from the solvent in solution?

Ans. A true solution is homogeneous in nature. The solute and solvent particles are very small. They cannot be distinguished even under a microscope.

Q. 3. Explain why particles of a colloidal solution do not settle down when left undisturbed, while in the case of a suspension they do.

Ans. Particle size in a suspension is larger than those in a colloidal solution. Also molecular interaction in a suspension is not strong enough to keep the particles suspended and hence they settle down.

Q. 4. Identify colloids and true solutions from the following:
Pond water, fog, aluminium paint, vinegar and glucose solution.

Ans. True solutions are vinegar and glucose solution. Colloids are fog, aluminium paint.

Q. 5. Give two examples each for (i) Aerosol, (ii) Emulsion.

Ans. (i) Aerosol: Clouds, smoke **(ii) Emulsion:** Milk, face cream.

Q.6. Smoke and fog both are aerosols. In what way are they different?

Ans. Both fog and smoke have gas as the dispersion medium. The only difference is that the dispersed phase in fog is liquid and in smoke it is a solid.

Q. 7. What do you understand by the term distillation? Give its one application.

Ans. Distillation is a process of boiling a liquid and then condensing the vapour obtained into a liquid. This process is used to obtain wines from the sugarcane juice.

Q.8. While diluting a solution of salt in water, a student by mistake added acetone (boiling point 56^0C) What technique can be employed to get back the acetone? Justify your choice.

Ans. Distillation is used to get back acetone. We know that boiling point of water is 100°C and since acetone is more volatile it will separate out first.

Q. 9. Define chromatography and give its one application.

Ans. Chromatography is a technique used for the separation of a mixture of solutes brought about by distribution of dissolved material between two immiscible phases, one of which is mobile phase and the other part is stationary phase. It is useful in forensic science to detect and identify trace amounts of substances in the contents of bladder or stomach.

Q. 10. Rain water stored in a tank contains sand grains, unfiltrable clay particles, calcium carbonate, salt, pieces of paper and some air bubbles. Select from amongst these one example each of a solvent, a solute, a colloid and a suspension.

Ans. Solvent – water Solute – salt
Colloid - air bubbles Suspension -clay particles

Q. 11. Classify the following as physical or chemical properties:

(a) The composition of a sample of steel is 98% iron, 1.5% carbon and 0.5% other elements.
(b) Zinc dissolves in hydrochloric acid with the evolution of hydrogen gas.
(c) Metallic sodium is soft enough to be cut with a knife.
(d) Most metal oxides form alkalis on interacting with water.

Ans. Physical properties-(a) and (c)
Chemical properties-(b) and (d)

Q. 12. Give two points of differences between an element and a compound

Ans.

Element	**Compound**
1. An element is made up of same kind of atoms. 2. An element cannot be split by physical or chemical methods.	1. A compound is obtained from different kinds of atoms. 2. A compound can be split into new substances by chemical methods.

Q. 13. Which of the following are not compounds?
(a) Chlorine gas (b) Potassium chloride
(c) Iron (d) Iron sulphide

(e) Aluminium (f) Iodine
(g) Carbon (h) Carbon monoxide
(i) Sulphur powder

Ans. Chlorine gas, iron, aluminium, iodine, carbon, sulphur powder.

Q. 14. Is water an element or a compound? Give reason in support of your statement.

Ans. Water is a compound because of the following reasons:
(i) It is composed of two different elements, hydrogen and oxygen which cannot be separated by physical methods. They can be separated only by electrolysis.

(ii) The physical and chemical properties of hydrogen and oxygen are entirely different from the properties of water.