

# Chemistry Revision (Questions) - IX GIS

## Ch.1 and 2

1. Differentiate between the following: a) true solution, colloids, suspension b) homogeneous and heterogeneous mixtures c) physical and chemical change d) evaporation and boiling . Give two examples for each.
2. Mention the separation techniques of the following mixtures and the principle :  
a) pure common salt from sea water. b) colours in a dye. c) oil and water. d) petrol and diesel.  
e) ammonium chloride and common salt. f) cream from milk. g) different gases from air.
3. Write the characteristics of particles of matter.
4. Define melting point, boiling point, latent heat of fusion, latent heat of vaporization, diffusion.
5. When a solid melts (or a liquid boils), its temperature remains the same, so where does the heat energy go? Explain.
6. a) Write the temperature in Celsius and Kelvin for the boiling point of water and melting point of ice. b) What happens to the boiling point of water and the melting point of ice if the water contains impurities?
7. Draw a labelled figure showing the interconversion of the three states of matter.
8. Name the process used to separate the components of colloids . What term is used to denote the components of colloids.

Chap-1 & Chap-2 (Chemistry IX)

(1)

(a)

	True Solutions	Colloids	Suspension
1)	It is a homogeneous	Heterogeneous mix	Heterogeneous mix
2)	Does not scatter light	Scatters a beam of light	Scatters a beam of light
3)	Pass through filter paper	Pass through filter paper	do not pass filter paper
4)	<u>Example:</u> Salt Solution Sugar Solution	<u>Example:</u> Shaving cream milk Ink Jelly	<u>Example:</u> Muddy water Sand in water

(b)

Homogeneous Mixture	Heterogeneous Mixture
(i) The composition remains uniform throughout	(i) The composition does not remain uniform throughout
(ii) The components of the mix cannot be separated by visible boundaries	(ii) The components of mixture can be separated by visible boundaries
(iii) Example: Salt + water mix, ethanol + water	(iii) Example: Sand + water, chalk + water.

(1)

(c) Physical change	Chemical change.
(i) No new substance is formed.	(i) A new substance is formed.
(ii) Reversible	(ii) Irreversible
(iii) Only physical properties of matter change	(iii) Chemical properties of substance change.
(iv) Example: Melting of wax	(iv) Example: Burning of wax

(d) Evaporation	Boiling
(i) Occurs at any temperature	(i) Occurs at boiling point temp.
(ii) Occurs at surface. Surface phenomena	(ii) Occurs within liquid.
(iii) No bubbles formed	(iii) Bubbles are formed.
(iv) Slow process	(iv) Quick / fast process

## (2) Separation Techniques:

(a) pure common salt from sea water:

Crystallization or by the evaporation

Crystallization is a process that separates a pure solid in the form of its crystals from a solution. This method is used to purify solids.

(b) colors in a dye:

Chromatography

Chromatography is the technique used for separation of those solutes that dissolve in the same solvent.

(c) oil and water:

Decantation

In mixture of two immiscible liquids, lighter one and heavier one form separate layer. The lighter one can be decanted after settling of mixture using a separating funnel.

(d) Petrol and diesel:

Distillation

Distillation is a process to separate two miscible liquids. This technique is based on the difference in boiling points of mixture of miscible liquids.

(e) Ammonium chloride and common salt

Sublimation

Sublimation is the process in which a solid substance is directly converted to the gaseous phase, without the intermediate liquid phase.

(f) Cream from milk

Centrifugation

In centrifugation, mixture can be separated through spinning.

(g) different gases from air

Fractional distillation

In this process, separation of mixture into parts or fraction on the basis of fractional difference in their boiling point.

(3) characteristics of particles of matter :

- (i) The particles of matter are very, very small
- (ii) The particles of matter have spaces between them
- (iii) The particles of matter are constantly moving
- (iv) The particles of matter attract each other.

(4) (a) Melting point :

The temperature at which a solid melts to become a liquid at the atmospheric pressure is called its melting point.

(b) Boiling point :

The temperature at which a liquid starts boiling at atmospheric pressure is known as its boiling point.

(c) Latent heat of fusion :

The amount of heat energy that is required to change 1 kg of a solid into liquid at atmospheric pressure at its melting point is known as the latent heat of fusion.

(d) Latent heat of vaporisation :

The amount of heat energy that is required to change 1 kg of liquid into gas at atmospheric pressure at its boiling point is known as the latent heat of vaporisation.

(a) Diffusion:

Diffusion is the process of a substance spreading out to evenly fill its container.

Diffusion occurs because the gas molecules are in continuous random motion.

(5) During a change of state, the temperature remains constant. This is because all the heat supplied to increase the temperature is utilised in changing the state by overcoming the forces of attraction between the particles. Therefore, this heat does not contribute in increasing the temperature of the substance.

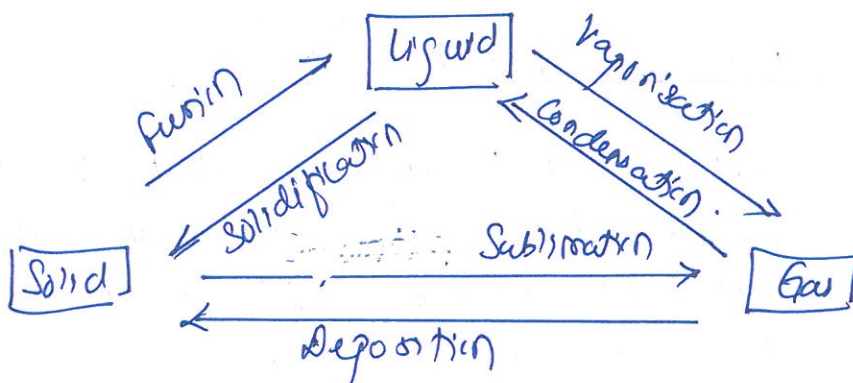
(6) (a)  $\text{Kelvin (K)} = ^\circ\text{C} + 273.15$

Boiling point of water =  $100^\circ\text{C}$  or  $373.15\text{ K}$

Melting point of ice =  $0^\circ\text{C}$  or  $273\text{ K}$ .

(b) Presence of impurities in water will increase the boiling point and decrease the melting point.

(7)



(8) centrifugation. Heterogeneous mixture.

(a)