Chemistry Practical Class 12 Dialysis of Lyophilic and Lyophobic Sol Viva Questions with Answers

Q1: What is the Theory of the experiment?

Answer:

The purification of lyophilic and lyophobic sols is performed using a dialysis method, in which colloidal particles are unable to pass through a parchment or cellophane membrane but electrolyte ions can.

Q2: What are Lyophilic Sols?

Answer:

The term lyophilic refers to a person who is fond of liquids. Lyophilic sols are those in which the dispersed phase and dispersion medium (water) has a high affinity. A colloidal solution is made by dissolving starch in water, for example. The dispersion medium in this colloidal solution is water, and the dispersed phase is starch.

Q3: What is meant by the term Dialysis?

Answer:

Dialysis is the process of separating electrolytes from a colloid by allowing the latter to diffuse through an animal or vegetable membrane.

Q4: Why do we use parchment paper in the experiment?

Answer:

In this experiment, we use parchment paper because colloidal particles cannot pass through it while ions can, causing them to be separated.

Q5: What is the size of the cellophane sheet/parchment paper used in the experiment?

Answer:

A square sheet of size 30 cm × 30 cm.

Q6: What is the role of silver nitrate solution?

Answer:

It helps detect Cl^- ions in the channel water.

Q7: How do you determine the presence of Na^+ ions?

Answer:

When a solution of uranyl zinc acetate is introduced to the channel water, a yellow precipitate develops.

Q8: How do you determine the presence of Cl^- ions?

Answer:

When a solution of uranyl zinc acetate is introduced to the channel water, a white precipitate appears.

Q9: Give examples of lyophilic and lyophobic sols.

Answer:

Lyophilic sols – Gum sol, starch sol, rubber, gelatin, egg albumin sol etc.

Lyophobic sols – Ferric hydroxide sol, aluminium hydroxide sol, arsenious sulfide sol etc.

Q10: How can we make dialysis fast?

Answer:

By circulating hot water rather than cold water, in the container or by applying an electric field across the dialyser.

Q11: Give the dispersed phase and dispersion medium of paints.

Answer:

Solid is the dispersed phase and liquid is the dispersion medium.

Q12: Write the dispersed phase and dispersion medium of butter.

Answer:

In solidified butter, the liquid is dispersed in solid. As a result, liquid serves as a dispersion medium, while solid serves as the dispersed phase.