Chemistry Practical Class 12 Lyophilic Sol: Starch, Egg Albumin and Gum Viva Questions with Answers

Q1: How do you identify egg yolk and egg albumin?

Answer: Egg yolk is the yellow colour present in the egg, while egg albumin is the colourless liquid found in the egg.

Q2: Constant stirring is required while adding the Egg albumin to the sodium chloride solution. True or false?

Answer: True.

Q3: How to extract egg albumin from egg yolk and egg albumin mixture?

Answer: Break the egg shell into a glass bowl and pipette out the colourless liquid.

Q4: What is starch mixed with?

Answer: Starch is mixed with distilled water.

Q5: How much distilled water is taken to prepare 500 mg of starch sol?

Answer: 100 mL

Q6: The starch and distilled water is heated to what temperature?

Answer: 100° C.

Q7: What is the preparation procedure for egg albumin sol?

Answer: The preparation for egg albumin sol involves two steps:

Prepare the 100mL of 5% solution of NaCl in water in a 250mL beaker.

Break one egg in a porcelain dish and pipette out the albumin and pour it into the NaCl solution. Stir well to ensure the sol is well prepared.

Q8: What is starch sol?

Answer: When water is used as the dispersion medium, starch produces a lyophilic sol. Heating accelerates the creation of sol. Heat the starch and water at roughly 100°C to make the starch sol. It is highly stable and is unaffected by the presence of electrolytic impurities.

Q9: What do you mean by Solvation?

Answer: The interaction of solute and solvent molecules is called solvation. Solute and solvent molecules are rearranged into solvent complexes, with solute ions surrounded by a concentric shell of solvent ions during solvation.

Q10: What is the test for starch?

Answer: The indicator used for the starch test is the iodine solution. We add drops of iodine solution to the starch sol to test for starch, and the presence of violet colour shows the presence of starch. If we make a colloidal starch solution according to the instructions, we can tint it violet by adding a few drops of iodine solution. This will show that the sol we have created is a colloidal starch solution.

Q11: What is Lyophilic Sol?

Answer: Lyophilic sols are colloidal solutions in which the dispersed phase particles have a significant affinity to the dispersion medium.

Q12: What are the precautions to be taken while preparing the lyophilic sol gum?

Answer: The precautions to be taken are as follows:

- The experiment's apparatus should be thoroughly cleaned with distilled water.
- Gum sol is made with distilled water.
- Make sure the gum is finely ground before adding it to the boiling water in the beaker.
- While making gum sol, keep stirring the mixture constantly.

Q13: What are the apparatus required for this experiment?

Answer: The apparatus required are:

- Tripod stand
- Beaker of about 50 to 250 mL
- Funnel
- Distilled water
- Wire gauze
- Glass rod
- Pestle and mortar
- Burner

- Filter paper
- 500 mg starch/gum/soluble starch

Q14: What are the use of parchment paper in the Dialysis of Lyophilic and Lyophobic Sol experiment?

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

Q15: How can a colloidal solution and a true solution of the same colour be distinguished?

Answer: When a bright beam of light is passed through both true and colloidal solutions in a glass vessel, only the colloidal solution exhibits the Tyndall effect, while the true solution does not.

Q16: What is peptisation?

Answer: Peptisation is breaking down a precipitate into colloidal form by shaking it with a dispersion medium in the presence of an electrolyte. A peptising agent is an electrolyte utilised for this purpose.

Q17: What's the Tyndall effect?

Answer: The Tyndall effect, also known as the Tyndall phenomenon, is the scattering of a light beam by a medium containing microscopic suspended particles—for example, smoke or dust in a room—making a light beam entering a window visible.

Q18: Where do we find albumin in human beings?

Answer: Albumin is a protein found primarily in human blood and milk. In humans, albumin is usually created by the blood of our liver. Its principal role is to assist us in maintaining a proper colloidal osmotic pressure, which prevents the loss of plasma in our blood.