

Class	IX	Subject	CHEMISTRY
PD	5	Chapter-2	IS MATTER AROUND US PURE
Recapitulation of the previous taught.	<ul style="list-style-type: none"> ✓ Student came to know about the method of centrifugation and its applications. ✓ Student came to know about the method of separating coloured substances using chromatography. ✓ They came to would know about the method of separation of constituents of air. 		
Sub-Concepts	<ul style="list-style-type: none"> ❖ Types of Solution-True solution, Suspension and Colloids ❖ Saturated and Unsaturated solution ❖ Determination of Solubility and Concentration. 		
Teaching Aid To be used	Smart Class, PowerPoint presentation, classroom objects, (advertisements), charts.		
Learning Outcome	<ul style="list-style-type: none"> • Student will be able to know about true solution, suspension and colloids • Student will be able to know about the Saturated and Unsaturated solution • They would get knowledge of the Solubility and Concentration and the process to find it. 		
Sl. No	Step Wise (What to be done)		
1 Introduction	<p>For Achievers</p> <p>Teacher should initiate the discussion on following topics, which will revolve around the core topic of the chapter like, How can we separate suspended solids from a mixture?</p> <ul style="list-style-type: none"> ➤ Vision to acquire knowledge of the types of Solution depending upon the 	<p>For Average</p> <ul style="list-style-type: none"> ➤ They would made familiar of the True solution, Suspension and Colloids ➤ They would be made to know of the Saturated and unsaturated solution. ➤ They would be given the idea of Solubility and Concentration and its determination process. 	

	<p>composition.</p> <ul style="list-style-type: none"> ➤ They would be given the concept of saturated and unsaturated solution. ➤ Vision to acquire knowledge of Solubility and Concentration and its determination. 	
<p>2. Solution and its Components, Properties of True Solutions</p>	<p>Solution: A solution is a homogeneous mixture of two or more substances. For example: Lemon water, sugar solution, soda water, etc.</p> <p>Components of Solution:</p> <p>(1) Solvent: The component of the solution that dissolves the other component in it and is usually present in larger amount, such component of solution is called the solvent. For example: Water, alcohol etc.</p> <p>(2) Solute: The component of the solution that is dissolved in the solvent and is usually present in lesser quantity, such component is called the solute. For example: Salt, sugar, iodine etc.</p> <p>Properties of solutions:</p> <p>(i) It is a homogeneous mixture. (ii) Particle size in a solution is less than 1 nm in diameter. (iii) Particles of a solution cannot be seen even with a microscope. (iv) A true solution does not scatter the light. (v) Solution is stable. (vi) The solute particles cannot be separated from the mixture by the process of filtration.</p> <p>Types of solutions: Various types of solutions are:</p> <p>(i) Solid in a solid solution: Alloys. (ii) Solid in a liquid solution: Sugar solution, salt solution. (iii) Liquid in a liquid solution: Lemon water, vinegar (acetic acid in water) (iv) Gas in a gas solution: Air. (v) Gas in a liquid solution: Soda water.</p>	



<p>3- Concentration</p> <p>4-Suspension and Colloids</p>	<ul style="list-style-type: none"> Concentration of solution = $\frac{\text{Amount of solute}}{\text{Amount of solution}}$ or $\frac{\text{Amount of solute}}{\text{Amount of solvent}} \times 100$ Mass by mass percentage of a solution $= \frac{\text{Mass of solute}}{\text{Mass of solution}} \times 100$ Mass by volume percentage of a solution $= \frac{\text{Mass of solute}}{\text{Volume of solution}} \times 100$ <table border="1" data-bbox="344 551 1533 815"> <thead> <tr> <th data-bbox="344 551 936 607">Suspension</th> <th data-bbox="936 551 1533 607">Colloidal Solution</th> </tr> </thead> <tbody> <tr> <td data-bbox="344 607 936 815"> <ul style="list-style-type: none"> Size of solute particles are visible with naked eyes Shows tyndall effect Translucent Solute particles settle down </td> <td data-bbox="936 607 1533 815"> <ul style="list-style-type: none"> Size of solute particles are not visible with naked eyes. Shows tyndall effect Translucent Colloidal particles do not settle down </td> </tr> </tbody> </table>	Suspension	Colloidal Solution	<ul style="list-style-type: none"> Size of solute particles are visible with naked eyes Shows tyndall effect Translucent Solute particles settle down 	<ul style="list-style-type: none"> Size of solute particles are not visible with naked eyes. Shows tyndall effect Translucent Colloidal particles do not settle down
Suspension	Colloidal Solution				
<ul style="list-style-type: none"> Size of solute particles are visible with naked eyes Shows tyndall effect Translucent Solute particles settle down 	<ul style="list-style-type: none"> Size of solute particles are not visible with naked eyes. Shows tyndall effect Translucent Colloidal particles do not settle down 				
<p>4.Solubility, Saturated and unsaturated solutions</p>	<p>Solubility: The maximum amount of the solute which can be dissolved in 100 grams of a solvent at a particular temperature is known as its solubility in that particular solvent.</p> <p>Conditions affecting solubility:</p> <p>(i) Temperature: Solubility of solids in liquids increases with the increase in temperature, whereas solubility of gases in liquids decreases on increasing the temperature.</p> <p>(ii) Pressure: Solubility of gases in liquids increases on increasing the pressure, whereas the solubility of solids in liquids remains unaffected by the change in pressure.</p> <p>Saturated Solution A solution in which no more quantity of solute can be dissolved at a particular temperature, is called saturated solution.</p> <p>Unsaturated Solution A solution in which more quantity of solute can be dissolved without raising its temperature, is called unsaturated solution.</p>				
<p>5.Home</p>	<p>Exercise II Q18 to Q23</p>				



Assignment	<ol style="list-style-type: none">1) Express 5 major properties of True Solution.2) Determine the Concentration of KNO_3 dissolved in 240 ml water if 20g of its sample having 25% purity is fully dissolved in it.3) Is there any difference between Solubility and Concentration, if so explain.
-------------------	--

