LESSON PLAN OF 3rd SEMESTER(2022-2023) CHEMICAL ENGINEERING		
Discipline :- CHEMICAL	Semester:-3RD	Name of the Teaching Faculty RAJESH KUMAR DUTTA
Subject:- PHYSICAL CHEMISTRY	No of Days/per Week Class Allotted :-04	Semester From:- **September** To:- **December**
Week	**Class Day**	**Theory/ Practical Topics**
1st	1st	**PHYSICAL PROPERTIES OF LIQUIDS** Intermolecular forces in liquid
	2nd	Vapour pressure and its Effect on Temperature and Boiling point
	3rd	Surface Tension
	4th	Viscosity, Measurement of viscosity by Ostwald Method
2nd	1st	Refractive Index, specific Refraction
	2nd	Determination of Refractive index by Refractometer
	3rd	Optical Activity, measurement of Optical Activity
	4th	Measurements of Optical Activity
3rd	1st	Solved problems based on physical properties of liquids
	2nd	Chapterwise Test
	3rd	**SOLUTIONS** Solution and types of solutions
	4th	Ways of Expressing concentration
4th	1st	Solved numerical related to concentration
	2nd	Solutions in Gases in Gases
	3rd	Henry's law and solved problems
	4th	**Solution in liquids in liquids**
5th	1st	Solubility of partially miscible liquids
	2nd	Solubility of solid in liquid
	3rd	Equilibrium concept, solubility curve
	4th	Raoult's law, ideal solution
6th	1st	Explanation of lowering of vapour pressure and its measurements
	2nd	Concept of elevation of boiling point and depression of freezing point
	3rd	**OSMOSIS AND OSMOTIC PRESSURE** Osmosis and Osmotic Pressure with Example
	4th	Function of semi-permeable Membrane
7th	1st	Osmotic pressure and Isotonic pressure
	2nd	Theories of osmosis
	3rd	Reverse osmosis
	4th	The laws of Osmotic Pressure
8th	1st	Solved problems on Osmosis

	2nd	Relation betwwen Vapour pressure & Osmotic pressure
	3rd	Relation between Vapour pressure & Osmotic Pressure
	4th	Simple problems
9th	1st	Surprise Test on chapter-1,2,3
	2nd	**DISTRIBUTION LAW** Introduction
	3rd	Nernst's Distribution Law
	4th	Equilibrium constant from distribution law
10th	1st	Solvent Extraction
	2nd	Multiple Extraction
	3rd	Concept of liquid-liquid Chromatography
	4th	Application of Distribution law
11th	1st	Application of Distribution law
	2nd	Application of Distribution law
	3rd	Numerical problems related to Distribution law
	4th	**COLLOIDS** Colloids and Types of colloidal system
12th	1st	Characteristics of solutions
	2nd	Applications of colloids
	3rd	Methods of preparation of sols & purifications of sols
	4th	Optical ,kinetic and electrical properties of sols
13th	1st	Emulsion and types of emulsion
	2nd	Roles of Emulsifier
	3rd	Preparation of Emulsions and there properties
	4th	Gel, types of gel,
14th	1st	Properties and Application of gel
	2nd	**ADSORPTION** Introduction
	3rd	Types of Adsorption
	4th	Physical adsorption and Chemisorption
15th	1st	Application of Adsorption
	2nd	Ion – exchange adsorption
	3rd	Compare absorption and adsorption
	4th	Ion – exchange application.