Koyana Education Society's
Balasaheb Desai College,Patan
Department of Chemistry
Monthly Teaching Plan Year-2023-2024
October - 2023 Semester III & V

Name of the Teacher- Prof.Dr.V.A.Kalantre

Dates	Unit	Sub unit	Teaching Method Aids
B.Sc.-II			
03/10/2023	**Unit 4: States of Matter**	4.1 Introduction, States of matter and their properties. A) Gaseous state:	Lecture
09/10/2023		4.2 Postulates of Kinetic Theory of Gases and derivation of the kinetic gas equation.	Lecture
10/09/2023		4.3 Ideal and Non ideal gases, Deviation of real gases from ideal behavior, compressibility factor, causes of deviation.	Lecture
16/10/2023		4.4 Van der Waals equation of state for real gases. Explanation of real gas behavior by Van der Waal's equation, Boyle temperature (derivation not required).	Lecture
16/10/2023		4.5 Critical Phenomena: PV-isotherms of real gases (Andrew's isotherms), Continuity of state, Critical constants and their calculation from Vander Waals equation. B) Liquid state	Lecture
23/10/2023		4.6 Liquid crystals: Difference between liquid crystal, solid and liquid.	Lecture
30/10/2023		4.7 Classification, structure of nematic, smectic and cholestric liquid crystal. 4.8 Thermography and seven segment cell.	Lecture
31/10/2023		4.9 Numerical Problems	Problem Solving

B.Sc.-III			
05/10/2023	**Unit 2. Spectroscopy**	2.6 Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, selection rules.	Lecture
06/10/2023		2.7 Comparative study of IR and Raman spectra, rule of mutual exclusion- CO_2 molecule.	Lecture
12/10/2023		2.8 Numerical problems.	Problem Solving
13/10/2023	**Unit 3. Photochemistry**	3.1 Introduction, Difference between thermal and photochemical processes. 3.2 Laws of photochemistry: i) Grotthus - Draper law ii) Lambert law iii) Lambert – Beer's law (with derivation) iv) Stark-Einstein law.	Lecture
19/10/2023		3.3 Quantum yield, Reasons for high and low quantum yield. 3.4 Factors affecting Quantum yield.	Lecture
20/10/2023		3.5 Photosensitized reactions – Dissociation of H_2, Photosynthesis. 3.6 Photodimerisation of anthracene, decomposition of HI and HBr.	Lecture
26/10/2023		3.7 Jablonski diagram depicting various processes occurring in the excited state: Qualitative description of fluorescence and phosphorescence. 3.8 Chemiluminescence. Electroluminescence and Bioluminescence.	Lecture using ICT
27/10/2023		3.9 Numerical problems	Problem Solving

Head
P G Center
Department of Chemistry
B.D. College, Pat.