

Odd Semester Lecture Plan

Name of the college: Government College of Arts, Science and Commerce, Sanquelim – Goa.

Name of Faculty: Ms. Rosalina Desilva

Subject: Chemistry

Paper code: CHC- 200 Concepts in Inorganic and Physical Chemistry

Program/Course: S.Y. B.Sc.

Division: A

Academic year: 2026 – 2027

Semester: III

Total Lectures: 15

Course Objectives:

Practical- To prepare standard solutions and determine strength of solutions, to synthesize metal oxalates and estimate the metal ions by volumetric and gravimetric methods, to introduce colligative properties and their applications, to study the Nernst distribution law and its applications.

Course Learning Outcome:

Practical - Calculate distribution coefficient of binary systems, prepare normal and molar solutions, calculate amount of substance in given solutions, carry out volumetric and gravimetric experiments to estimate unknown substances, deduce the lattice parameters of crystalline solids

Month	Lectures From: To:	No. of lectures allotted	Topic, Subtopic to be covered	Learning outcome	ICT Tools	Reference books
June 2026	22/6/26 - 27/6/26	02	B- III General Instructions and safety measures	Students will be able to: carry out volumetric experiments	Chalk and talk	
June- July	29/6/26 - 04/7/26	02	Volumetry – HCl- Na_2CO_3	carry out volumetric experiments	Chalk and talk	1. Satya Prakash, G.D. Tuli, S.K. Basu, R.D. Madan, Advanced Inorganic Chemistry, Vol. I, 19th edn., S. Chand Publishers (2016) 2. P. L. Soni and Mohan Katyal, Textbook of Inorganic Chemistry by, Sultan Chand and Sons, 20th Edition 3. Puri, Sharma and Kalia, Principles of
July	06/7/26 - 11/7/26	02	Volumetry – Ca- EDTA	carry out volumetric experiments	Chalk and talk	
July	13/7/26 - 18/7/26	02	Gravimetry- $\text{BaSO}_4 + \text{NH}_4\text{Cl}$	Skills in gravimetry	Chalk and talk	

July	21/7/26 - 26/7/26	02	Gravimetry- Fe- Fe ₂ O ₃	Skills in gravimetry	Chalk and talk	Inorganic Chemistry, 33rd Edition, Vishal Publishing Co. (2018). 4. Krishna Mohan Srivastava, Essentials of Inorganic Chemistry, Bio-Green Books 5. L. Pauling, The Nature of The Chemical Bond, 3rd Ed.; Cornell University, Press, 6. J. D. Lee, Concise Inorganic Chemistry by, Chaman and Hall, 5th ed. (1996). 1. J. Mendham, R. C. Denney, J. D. Barnes, M. Thomas, B. Sivasankar, Vogel's Textbook of Quantitative Chemical Analysis, 6th Edn. Pearson Education. 2. G. Marr and B. W. Rockett, Practical inorganic Chemistry, Van Nostrand Reinhold Company, London. (1972) 3. S. W. Rajbhoj and T. K. Chondhekar, Systematic Experimental Physical Chemistry, Anjali Publication, Second Edn 4. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi, 2018.
July-August	27/7/26- 01/8/26	02	Inorganic preparations	Synthesise oxalates	Chalk and talk	
August	03/8/26 - 08/8/26	02	, Inorganic preparations	Synthesise oxalates	Chalk and talk	
August	10/8/26 - 14/8/26	02	Phase diagram of binary mixtures	Draw Phase diagram	Chalk and talk	
August	17/8/26 - 22/8/26	02	Partition coefficient I ₂ +CH ₂ Cl ₂	Calculate distribution coefficient	Chalk and talk	
August	24/8/26 – 29/8/26	02	Data analysis:Volumetry- Ca	Data analysis	Chalk and talk	
September	31/08/26- 05/09/25	02	Partition coefficient Benzoic acid		Chalk and talk	
September	07/09/26- 12/09/26	02	Indexing ,lattice parameters of Simple cubic, FCC and BCC	deduce the lattice parameters of crystalline solids.	Chalk and talk	
September	12/09/26- 26/09/26	02	Indexing ,lattice parameters of Simple cubic, FCC and BCC	Deduce the lattice parameters of solids.	Chalk and talk	
September October	28/09/26- 03/10/26	02	Molal B.P elevation constant	.	Chalk and talk	
October	05/10/26- 10/10/26	02	Born Determination of molal F.P depression constant		Chalk and talk	
October	12/10/26- 14/10/26	02	Repetition		Chalk and talk	