

Semester Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim-Goa		
Name of Faculty: Dr. Dattaprasad D Narulkar	Subject: Chemistry	
Paper code: CHC-308 (Inorganic Chemistry III)	Program/Course: T.Y. B.Sc. (major)	Division: -
Academic year: 2026 - 2027	Semester: V	Total Lectures: 15 (Theory)
Course Objectives: 1. To study the preparations, chemical properties, structure and bonding of halogen compounds. 2. To understand fundamentals of the metal ligand bond in accordance with VBT and CFT. 3. To learn the fundamentals of solid-state chemistry, superconductivity and to study their applications. 4. To comprehend the concepts of acid bases and non-aqueous solvents.		
Course Learning Outcome: CO1. Define terms related to acid-base chemistry, solid state chemistry. CO2. Discuss and explain concepts in solid-state chemistry, acid-base theories. CO3. Apply principles of acid-base theories, solve problems in solid state and predict the structure .		

CO4. Compare & contrast theories of acid-base theories and analyse solid-state structures.

Month	Lectures From	Lectures To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assignment	ICT Tools	Reference books
June	22/06/2026	27/06/2026	01	Introduction to Solid State Chemistry: Structures of Solids: Importance of Solid-State Chemistry		Smart board/PPT	Ref 1-2
June-July	29/06/2026	04/07/2026	01	types of solids, crystal lattice, lattice points, unit cells, and lattice constants		Smart board/PPT	Ref 1-2
July	06/07/2026	11/07/2026	01	Close packing of rigid spheres (hcp, ccp),		Smart board/PPT	Ref 1-2
July	13/07/2026	18/07/2026	01	packing density in simple cubic, bcc, fcc and hcp lattices		Smart board/PPT	Ref 1-2
July	20/07/2026	25/07/2026	01	Relationship between density of unit cell and lattice parameters		Smart board/PPT	Ref 1-2
July-August	27/07/2026	01/08/2026	01	Tetrahedral and octahedral interstitial voids in ccp	Solid state model making	Smart board/PPT	Ref 1-2
August	03/08/2026	08/08/2026	01	Numerical problems		Smart board/PPT	Ref 1-2

August	10/08/2026	15/08/2026	01	Acid Bases and Non-aqueous Solvents Arrhenius theory, Lowry-Bronsted Theory		Smart board/PPT	Ref 3-6
August	17/08/2026	22/08/2026	01	The Lux – Flood Solvent Systems, Solvent System theory		Smart board/PPT	Ref 3-6
August	24/08/2026	29/09/2026	-	Lewis Concept of Acids and Bases.			
August-September	31/09/2026	05/09/2026	01	Classification of solvents and importance of non-aqueous solvents		Smart board/PPT	Ref 3-6
September	07/09/2026	12/09/2026	01	Supercritical carbon dioxide and ionic liquids as solvents.		Smart board/PPT	Ref 3-6
September	14/09/2026	19/09/2026	01	Ganesh Chaturthi break		Smart board/PPT	Ref 3-6
September	21/09/2026	26/09/2026	01	Levelling effect		Smart board/PPT	Ref 3-6
September-October	28/09/2026	03/10/2026	01	reactions in non-aqueous solvents with respect to liquid NH ₃ , liquid SO ₂ and liquid HF.		Smart board/PPT	Ref 3-6
October	05/10/2026	10/10/2026	01	reactions in non-aqueous solvents with respect to liquid NH ₃ , liquid SO ₂ and liquid HF. (Continued)		Smart board/PPT	Ref 3-6
October	12/10/2026	14/10/2026	01	Revision		Smart board/PPT	

Reference Books:

1. K. V. S. Laxmi Devi, N. C. Patel, S.S. Dhume, A. Venkatachalam, S. P. Turakhia, Chhaya Dixit and R. A. Mirji, College Inorganic Chemistry for T.Y. B. Sc. 21st Edn, Himalaya Publishing House
2. Lesley E. Smart, Elaine A. Moore, Solid State Chemistry- An Introduction, 3rd Edn. Taylor and Francis, (2005)
3. J. D. Lee, *Concise Inorganic Chemistry*, 5th Edn. Wiley India. 2003.
4. P. W. Atkins, T. L. Overton, J. P. Rourke, M. T. Weller & F. A. Armstrong, *Shriver & Atkins' Inorganic Chemistry*, 5th Edn.; Oxford University Press. 2010.
5. F. A. Cottton, G. Wilkinson and P. L. Gaus, *Basic Inorganic Chemistry*. 3rd Edn. Wiley India. 2007.
6. B. R. Puri, L. R. Sharma and K. C. Kalia, *Principles of Inorganic Chemistry*, 33rd Edn, Vishal Publishing Co. 2020.

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
ISA 3	7.5
Practical SEE	25
Semester End Exam	60

Total 100

*Best two ISA will be considered