

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 Theory and Practical**

Paper code: CHC- 301 Inorganic Chemistry

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

Division: A

Academic year: 2027- 2026

Semester: V

Total Lectures: 15

Course Objectives: Theory-To understand fundamentals of the metal ligand bond in accordance with VBT and CFT.

Course Learning Outcome:

Theory-At the end of the course, students will be able to: Apply the VBT and CFT, and Differentiate VBT and CFT approaches for Metal-ligand bonding.

Month	Lectures From: To:	No. of lectures allotted	Topic, Subtopic to be covered	Learning outcome	ICT Tools	Reference books
June	22/6/2026	01	Introduction- Valence Bond Theory	Students will be able to: apply VBT to coordination compound	Smart board & PPT	1. P.L. Soni and Mohan Katyal, Textbook of Inorganic Chemistry by Sultan Chand and Sons, 20 th Edn (1997) 2. Puri, Sharma and Kalia, Principles of Inorganic Chemistry, 33rd Edition, Vishal Publishing Co. (2018). 3. J.D. Lee, Concise Inorganic Chemistry by Chaman and Hall, 5th ed. (1996). 4. F. A. Cotton and G. Wilkinson, Advanced Inorganic Chemistry, 3 rd Edn. 5. P. W. Atkins, T. Overton, J. Rourke, M. Weller, F. Armstrong, Shriver & Atkins, Inorganic Chemistry, 5th Ed.; Oxford
June- July	29/6/26 - 04/7/26	01	Hybridisation of the central metal orbitals sp ³ , dsp ² , sp ³ d	Apply VBT to coordination compounds	Smart board	
July	06/7/26 - 11/7/26	01	Hybridisation- dsp ³ , sp ³ d ² /d ² sp ³ B-III Gravimetry- Ni as Nidmg	Apply VBT to coordination compound Continuation	Smart board	
July	13/7/26 -	01	Electroneutrality principle,	Apply VBT to	Smart	

	18/7/26		limitations of Valence Bond Theory.	coordination compound	board	Publications, (2009). 6. 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
July	21/7/26 - 26/7/26	01	Crystal field theory: Postulates	Apply CFT to coordination compound	Smart board	
July-August	27/7/26- 01/8/26	01	Effect of CFS of d orbitals in octahedral and tetrahedral geometry	Apply CFT to coordination compound	Smart board	
August	03/8/26 - 08/8/26	01	Effect of CFS of d orbitals in octahedral and tetrahedral geometry	Apply CFT to coordination com	Smart board	
August	10/8/26 - 14/8/26	01	Factors affecting Δ , Spectrochemical series.	Apply CFT to coordination comp	Smart board	
August	17/8/26 - 22/8/26	01	Crystal Field Stabilization Energy (CFSE)-calculation	Apply CFT to coordination comp,	Smart board	
September	31/08/26- 05/09/25	01	Consequences of crystal field splitting	Apply CFT	Smart board	
September	07/09/26- 12/09/26	01	Consequences of crystal field splitting	Apply CFT	Smart board	
September	12/09/26- 26/09/26	01	Limitations of CFT	Compare CFT and VBT	Smart board	
September October	28/09/26- 03/10/26	01	Evidences for covalency: i) intensities of d-d transitions, ii) ESR	Compare CFT and VBT	Smart board	
October	05/10/26- 10/10/26	01	Evidences for covalency: iii) Nephelauxetic effect			

			iv) NMR spectra.			
October	12/10/26- 14/10/26	01	Revision	Compare CFT and VBT	Smart board	