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-106 Section B	**Program/Course:** TY B.Sc.	**Division:** A
Academic year: 2024 - 2025	**Semester:** V	**Total Lectures:** 30

Course Objectives: To teach the students important features of transition metal complexes,stability of complexes and factors affecting the stability. The student should also understand the application of MOT to various metal complexes to explain magnetic property of complexes. To understand oxidation and reduction reactions w.r.t.redox potentaials and the use of Latimer, Frost and pourbaix diagrams. To study about bioinorganic molecules and characteristics of nano materials

Course Learning Outcome: The student will be able to explain bonding in metal complexes w.r.t. the MOT and draw molecular orbital diagrams and therefore deduce magnetic property of complex compounds . and understand factors affecting the stability of complexes. The students can relate redox potentials by using various diagrammatic representations to understand redox reactions. The students will be able to explain the role of various elements in the biological systems. They will also understand the role of nanomaterials in various fields.

Month	Lectures From:	To:	No. of lectures allotted	Topic, Subtopic to be covered	Learning outcome	ICT Tools	Reference books
JUNE	28/6/24	29/6/24	Nil				
JULY	1/7/2024	6/7/2024	01	Topic 1: Coordination Compounds-important terms and definitions	The student will be able to define certain terms used to describe coordination	Smart-board	**1.** F. Albert Cottton, Geoffrey Wilkinson and Paul L. Gaus, *Basic inorganic chem.* 3rd Edn. Wiley India **2.** .James E. Huheey, Ellen A.

			04+04	B-I and B-II Gravimetry- Al	compounds		Keiter, Richard L.Keiter and Okhil K. Medhi, *Inorganic Chemistry, Principles of Structure and Reactivity*. 4th Edn. Pearsons 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.
	8/7/24	13/7/24	01 04+04	Topic 1: Coordination Compounds-important terms and definitions B-I and B-II Gravimetry- Fe	Students will be able to differentiate between double salts and complex compounds	Smart board	
	15/724	20/7/24	01 04+04	Topic 1: Coordination Compounds-important terms and definitions B-I and B-II Gravimetry- Zn	The student will be able to deduce geometry on the basis of coordination no	Smart board	
	22/7/24	27/7/24	01	Topic 1: Coordination Compounds-important terms and definitions	The student will be able to apply MOT to complex	Smart board	

			04+04	B-I and B-II Gravimetry- Ni	compounds		
JULY- AUGUST	29/7/24	3/8/24	01 04+04	Topic 1: Coordination Compounds-important terms and definitions B-I and B-II Gravimetry- Ba		Smart Board	
AUGUST	5/8/24	10/8/24	01 04+04	Topic 1: Coordination Compounds-important terms and definitions B-I and B-II Inorganic preparations	The student will be able to apply MOT for various molecules	Smart board	
	12/8/24	17/8/24	01 04+04	Topic 1: Coordination Compounds-important terms and definitions	The student will be able to understand factors that affect stability of complexes	Smart Board	1. Concise Inorganic Chemistry by: J.D.Lee 2. Inorganic Chemistry by Langford and Shriver.

				B-I and B-II Inorganic preparations			
	19/8/24	24/8/24	02 04+04	Oxidation and Reduction Electrochemical series Redox stability of water B-I and B-II Inorganic preparations	The students are able to understand concept of oxidation and reduction reactions	Smart board	
	26/8/24	31/8/24	02 04+04	Oxidation and Reduction Frost and Latimer diagrams B-I and B-II Inorganic preparations	Understand important terms used to explain redox reactions	Smart board	
SEPTEMBER	2/9/24	5/9/24	01 04+04	Oxidation and Reduction Pourbaix diagrams B-I and B-II Inorganic preparations	Application of redox potential in diagrammatic representation	Smart board	
	13/9/24	14/9/24	01 04+04	Oxidation and Reduction Use of redox potential in extraction of metals B-I and B-II Inorganic preparations	Metallurgical processes	Smart board	

	16/9/24	21/9/24	02 04+04	Bioinorganic Chemistry Trace, essential and other metals B-I and B-II Inorganic preparations	Presence of elements- metals and non-metals in biological systems	Smart board	
	23/9/24	28/9/24	01 01 04+04	Bio-inorganic Chemistry Bio-inorganic molecules ISA- written test B-I and B-II Inorganic preparations	Presence of Fe, Mg in Haemoglobin, chlorophyll	Smart board	1.Chemical Applications of Group Theory byF. A. Cotton ,Wiley India 2.Group Theory and its chemical applications by: P. K. Bhattacharya, Himalaya publication.
OCTOBER	30/9/24	5/10/24	01 04+04	Bio-inorganic Chemistry Repetition	Model systems	Smart board	
	7/10/24	12/10/24	02 04+04	Nanochemistry Important terms Repetition	Students will study various nanomaterials	Smart board	
	14/10/24	19/10/24	02	Nanochemistry Types of nanomaterials properties		Smart board	
	21/10/24	22/10/24	01	Nanochemistry application			
				Revision			