

Shri G.S. Institute of Technology and Science Indore
Department of Applied Chemistry and Chemical Technology
Proposed Lecture Plan
Subject: CH 91106: INORGANIC CHEMISTRY

Per iod No.	Description of topics to be taught	Reference/ Remark
	Unit -I	
1.	Introduction of inorganic chemistry	
2.	Classical approach of chemical bonding : Earlier theories and Modern concepts	1. Huheey JE, Keiter EA, Keiter RL, Medhi OK, Inorganic chemistry (Pearson Publishing) 2. Satya Prakash, Advanced Chemistry of Rare Elements (S. Chand). 3. Bhattacharaya PK, Bioinorganic Chemistry, PHI Learning, 4. Nanochemistry and nanotechnology by Kulkarni. 5. Advance inorganic chemistry by Cotton and Wilkinson
3.	Classical approach of chemical bonding : Earlier theories and Modern concepts	
4.	Fajan's rule and its applications	
5.	Wave Mechanical concept and Valence bond theory of chemical bonding	
6.	Molecular orbital theory of chemical bonding	
7.	VSEPR theory	
8.	Metallic bond and Band gap theory	
	Unit -II	
9.	Introduction of Hydrides and its types	
10.	Classification, methods of preparation, chemical properties and applications of hydrides	
11.	Classification, methods of preparation, chemical properties and applications of nitrides	
12.	Classification, methods of preparation, chemical properties and applications of carbides	
13.	Classification, methods of preparation, chemical properties of carbonyl compounds	
14.	Applications of carbonyl compound in catalyst and other organic and inorganic synthesis	
15.	Classification, methods of preparation, chemical properties and applications of Peracids.	
16.	Classification, methods of preparation, chemical properties and applications of peracids salts .	
	Unit -III	
17.	Introduction of Modern concept of acids and bases	
18.	Lorry bronsted concept and its application	
19.	Lewis Concept and its applications	
20.	HSAB principal and its applications	
21.	Introduction and Various properties non-aqueous solvents. Various Reaction in non-aqueous solvents	
22.	Introduction, properties and Reaction in liquid ammonia	
23.	Introduction, properties and Reaction in Liquid SO ₂	
24.	Introduction, properties and Reaction in Liquid HF	
	Unit -IV	

25.	Introduction and various theories of coordination compounds.	
26.	Nomenclature of complexes	
27.	Structure of complexes and Werner theory	
28.	Crystal field theory and Molecular orbital theory of coordination compounds	
29.	Chelation, Stability constants of complexes and their determination	
30.	Application of coordination complexes	
31.	Stereo chemistry & reaction mechanism of coordination complexes	
32.	Introduction of Bioinorganic chemistry and its applications.	
	Unit -V	
33.	Introduction of Tran uranium elements and its properties	
34.	Electronic configuration of Actinides and Lanthanide's	
35.	Extraction of Actinides and Lanthanide's by various processes.	
36.	Applications of Lanthanide's.	
37.	Applications of Actinides	
38.	Introduction of Nano chemistry	
39.	Elementary idea of nano chemistry	
40.	Applications of nano chemistry	