Name of the college: Govt. college of Arts Sci. and Com. Sanquelim							
Name of Faculty: Ms. Varsha K. Sail	Subject:Chemistry						
Paper code: CHC-100 Fundamentals of							
Chemistry	Program: FY BSc	Division: A					
Academic year: 2024 - 2025	Semester: II	Total Lectures: 15					
Course Objectives: At the end of							
the course the student will be							
able to understand							
-different theories							
nronosed for progressive							
understanding of Atomic							
structure							
structure							
-The theories of bonding	-The theories of bonding						
in ionic and covalent compounds							
Expected Course Outcome: Students							
attain though understanding about							
the progression in atomic structure							
Student Learning Outcome:							
Students are swept through							
different theorier of Atomic							

structure, with detail understanding fact in of quantum theory

Month	Lecture From	Lecture To	No. of lecture s allotte d	Topic, Subtopic to be covered	Exerci se/ Assign ment	ICT Tools	Reference books
Decem ber202 4	Oth	1.2 th	01	Fundamentals of Inorganic Chemistry Atomic Structure: Introduction to Different theory, significance of Rutherford model		Smart board, PPT and chalk and black board	Lee, J.D. Concise Inorganic Chemistry ELBS, 1991. 2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. Basic Inorganic Chemistry, 3rd ed., Wiley. 3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. Concepts and Models in Inorganic Chemistry, John Wiley & Sons. 4. Huheey, J.E., Keiter, E.A., Vaitor P. L. &

					Medhi, O.K. Inorganic Chemistry: Principles of Structure and Reactivity,
					Pearson
					Education India, 2006.
	15 th	21 th	Review of: Bohr's theory and its limitations		
				Smart	Lee, J.D. Concise
				board,	Inorganic
				PPT and	<i>Chemistry</i> ELBS,
				chalk	1991. 2 Cotton E A
				and	2. Cotton, F.A.,
				board	WIIKINSON, G. α
				Doard	Gaus, F.L. Dusic
					Chemistry 3rd
					ed Wiley
					3. Douglas, B.E.
					McDaniel, D.H.
					& Alexander, J.J.
					Concepts and
					Models in
					Inorganic
					Chemistry, John
					Wiley & Sons.
			dual behaviour of matter		4. Huheey, J.E.,
Jan 25	2nd	4th	and radiation, de Broglie's relation,		Keiter, E.A.,

					Keiter, R.L. & Medhi, O.K. Inorganic Chemistry: Principles of Structure and Reactivity, Pearson
					Education India, 2006.
	6 th	11 th	Heisenberg Uncertainty principle.		
	13 th	18 th	Hydrogen atom spectra. Need of a new approach to atomic structure.		
	20 th	25 th	Introduction to Schrodinger equation (equation not to be derived) and wave function.		
	27 th	1 st	Radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation)		
Feb 25	3 rd	8 th	. Radial and angular nodes and their significance.		
	10 th	15 th	Radial distribution functions and the concept of the most		

			Probable distance with special reference to 1s and 2s atomic orbitals.		
	17 th	22 nd	Quantum numbers and their significance, Discovery of spin, spin quantum number (s)		
	24 th	1 st	and magnetic spin quantum number (ms)		
March 25	3 rd	8 th		Draw diagram of all orbital – radial and angular	
	10 th	15 th	Shapes of s, p and d atomic orbitals, nodal planes.		
	17 th	22 nd	Rules for filling electrons in various orbitals, electronic configurations of the atoms.		
	24 th	29 th	Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations	Write electronic configurat ion of all elements from H to Zn	

	31 st	5 th	Problems		
April 2025	7 th	12 th	Revision		

* Assessment

Rubrics

Compo nent	Max Marks
ISA 1	7.5
ISA 2	7.5
Semest	
er End	
Exam	60