

CURRICULUM PLAN-Dr.Rajita**(Odd Semester, 2024-2025)****B.Sc.(H) Chemistry, Ist Year (Semester I)****Name of Paper:-Inorganic Chemistry–I Atomic Structure & Chemical Bonding****Total credits :(3+1) Theory allocated: 1**

Contents	Allocation of Lectures	Month wise schedule to be followed	Tutorial/Assignments/ Presentation etc
Radial function plots, radial probability distribution plots, angular distribution curves. Shapes of s, p, and d orbitals, Relative energies of orbitals. Pauli's Exclusion Principle, Hund's rule of maximum spin multiplicity, Aufbau principle and its limitations	6	Third week of November to last week of December	Doubt session, class test and Previous Year Papers Discussion
Valence shell electron pair repulsion (VSEPR) theory, shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H ₂ O, NH ₃ , PCl ₃ , PCl ₅ , SF ₆ , ClF ₃ , I ₃ , BrF ₂ ⁺ , PCl ₆ ⁻ , ICl ₂ - ICl ₄ - , and SO ₄ ²⁻ . Application of VSEPR theory in predicting trends in bond lengths and bond angles. Valence Bond theory (Heitler-London approach). Hybridization, equivalent and nonequivalent hybrid orbitals, Bent's rule. Ionic character in covalent compounds: Bond moment and dipole moment. Percentage ionic character from dipole moment and electronegativity difference. Molecular orbital diagrams of homo & hetero diatomic molecules [N ₂ , O ₂ , C ₂ , B ₂ , F ₂ , CO, NO] and their ions; HCl (idea of s-p mixing and orbital interaction to be given).	13	Last week of August to 2 nd week of November	Doubt Session, Previous years paper discussion

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