Paper 202102 Inorganic Chemistry 2 Credits, 50 Marks(30 Hrs)

3Hrs / Week

I. Chemical Bonding: 12 Hrs

A) Covalent Bond - Valence theory and its limitations, various types of hybridization and

shapes of simple inorganic molecules and ions, $BeCl_2$, BF_3, $SiCl_4$, PCl_5, SF_6, IF_7

Valence shell electron pair repulsion (VSEPR) theory for shapes of NH_3, H_2O, SF_4, ClF_3 and ICl_2^-

B) Ionic Bond : Formation of ionic bond, Lattice energy (Born Lande equation), Born Haber cycle, solvation energy (Numerical problems expected), solvation energy Fajan's rules

II.Chemistry of P block elements and noble gases : 10 Hrs

Comparative study of elements Gr.13 -17 elements : trends in periodic properties, allotropy, inert pair effect.

Chemical properties of the noble gases, chemistry of Xenon, structure and bonding in Xenon compounds.

III.Theory of Qualitative Analysis : 08 Hrs

Solubility product and common ion effect.Use of borax, cobalt nitrate,sodiumcarbonate,hydrogensulphide,ammonium chloride and yellow ammonium sulphide.

Detection of following acid radicals in presence of each other :CO_3^{-2} and SO_3^{-2}, NO_2^- and NO_3^-, Cl^-, Br^- and I^-