

**St. Mary's P.G. College , Vidisha {M.P.}**

**B. Sc. Third Year {Chemistry}**

**Session – 2019-20**

**Inorganic – Chemistry**

**Q.{01} :- Describe Pearson theory of hard and soft acids – bases and discuss its applications ?**

**Q.{02} :- What do you mean by Symbiosis ? Explain with examples ?**

**Q.{03} :- What are silicones ? Give any one method of preparation of silicones . Explain its classification and uses ?**

**Q.{04} :- What do you understand by Phosphazenes? Describe the preparation, Properties and structure of Phosphazenes ?**

**Q.{05} :- Explain the crystal field splitting in square-planar, tetrahedral and octahedral fields ?**

**Q.{06} :- Describe the relation between spectro-chemical series and the f-factor of ligands in detail ?**

**Q.{07} :- Give a detailed account of thermodynamic – stability of metal complexes ?**

**Q.{08} :- What do you mean by magnetic behaviour ? How many types of magnetic behaviour ? Explain it ?**

**Q.{09} :- What do you mean by magnetic – susceptibility ? Describe the methods of measuring magnetic – susceptibility ?**

**Q.{10} : - What do you mean by L-S Coupling ? Explain the term symbols obtained by L-S Coupling with one example ?**

**Q.{11} : - Write short notes on –**

**(A) d-d transition & Selection rule**

**(B) Charge transfer spectra**

**(C) Curie temperature & Neel Temperature**

**(D) Orgel diagram**

**Q.{12} : - What are Organo metallic Compounds ? Describe methods preparation , structure and applications of organo metallic compounds of Lithium and Aluminium ?**

**Q.{13} : - Give methods of preparation and properties of Metal Alkyls ?**

**Q.{14} : - Write short notes on following –**

**(I) Nitrogen fixation .**

**(II) Haemoglobin & Myoglobin .**

**(III) Na-K Pump .**

**(IV) Effective atomic number and 18 e<sup>-</sup> rules .**

**Q.{15} : - explain the structure of metal nitrosuls using Molecular Orbital theory with diagram ?**