DUMKAL COLLEGE

DUMKAL, BASANTAPUR

Model Questions

Topic: Valence Bond Theory

Course Code: CHEMHT-11

Semester: V(Hons)

Name of the teacher: Saleha khatun

1. **Explain the nature of bonding in $[Ni(CN)_4]^{2-}$ on the basis of Valence Bond Theory.**

2. **On the basis of VBT,account for magnetic Properties of**
   i) **$[Ni(NH_3)]_6^{2+}$ ii) $[Co(NH_3)_6^{2+}$ iii)$[Fe(CN)_6]^{4-}$ iv) $[Cr(CN)_6]^{4-}$**

3. **Find out the hybridization and geometry of the complex $[Co(C_2O_4)_3]^{3-}$ on the basis of VBT.**

4. **Calculate the spin only magnetic moment value for $[MnBr_4]^{2-}$. Also predict the geometry of the complex.**

5. **Write down the name of the orbitals involved in hybridization in $[PtCl_4]^{2-}$ On the basis of VBT.**

6. **State the limitations of VBT.**

7. **State the assumptions of VBT.**