Question Bank SEM III-2014

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SYBSC Chemistry Paper II(Inorganic)

USCH302

Unit I

Chemical bonding and molecular structure: VBT

1.Define the following terms.

a. Resonance b . Resonance energy

2 .Explain formal charge with a suitable example.

3. Give rules for writing resonating structures.

4.Give any two limitations of VBT.

5. Explain the hybridization involved in $BaCl_2$.

6.Explain the hybridization involved in PCl_5.

7.Explain the hybridization involved in MnO_4^-.

Unit II

Bonding in coordination compounds and gravimetric analysis.

1. What are assumptions of Valence Bond Theory?

2. Write short notes on

a. Electro neutrality Principle.

b. Back Bonding or Multiple bonding in complexes.

3. What are inner orbital complexes? Explain it with suitable example.

4.What are outer orbital complexes? Explain it with suitable example.

5.On the basis of VBT,explain the following.

1.SP^3hybridization in $[NiCl_4]^{2-}$

2.dSP^2 hybridization in $[Ni(CN)_4]^{2-}$

3.dSP^3hybridization in $[Fe(CO)_5]$

4.d^2SP^3hybridization in $[Cr(CO)_6]$ (inner orbital complex)

5.SP^3d^2 hybridization in $[CoF_6]^{3-}$(Outer orbital complex)

Gravimetric analysis:

1.Define gravimetric analysis.

2.Explain two types of gravimetric analysis.

3.Explain the role of common ion effect in gravimetric analysis.

3.Explain the role of Diverse ion effect(Salt effect) in gravimetric analysis.

4.What is ostwald's ripening?

5.Explain the importance of digestion in gravimetric analysis.

6.Discuss the principles underlying drying of precipitate in gravimetric analysis.

7.Explain coprecipitation with a suitable example.

8.Explain postprecipitation with a suitable example.

9.Define nucleation.

10.Explain the use of following organic reagents in gravimetric analysis.

a.Dimethylglyoxime(DMG)

b.Salicylaldoxime

c.Oxine(8-hydroxyquinoline)