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 **CHEMISTRY**

**PRACTISE WORKSHEET**

1. Explain the nature of bonding in the complex [Ni(CN)4]2- on the basis of valence bond theory

2. Which of the following is correct for s-orbital?

a. Directional

b. Non-directional

c. Has zero angular momentum

d. Electron density is unequal

3. Which of the following is correct for [Co(C2O4)3]3-?

a. dsp2, Square planar

b. dsp2, Tetrahedral

c. sp3d2, Octahedral

d. d2sp3, octahedral

4. Calculate the spin only magnetic moment value for [Mn(Br)4]2-.Also predict the geometry of the complex ion.

5. What are the orbitals involved in hybridization of PtCl42-?

6. For [NiCO4] and [Ni(CN)4] which property is same for the given pairs

a. Oxidation state

b. Magnetic moment

c. Electronic configuration

d. Shape

7. Among the following aqua complexes which is the low spin complex

a. [Ti(H2O)6]3+

b. [Co(H2O)6]3+

c. [Co(H2O)6]2+

d. None of the above

8. Among the following which diamagnetic and paramagnetic, [AgCN4]-1 ; [AuCN4]2-

|  |  |  |
| --- | --- | --- |
|  |  High Spin |  Low spin |
|  | D-configurationT2g and eg | No.of unpaired electrons | d-configurationt2g and eg | No.of unpaired electrons |
| D0 |  |  |  |  |
| D1 |  |  |  |  |
| D2 |  |  |  |  |
| D3 |  |  |  |  |
| D4 |  |  |  |  |
| D5 |  |  |  |  |
| D6 |  |  |  |  |
| D7 |  |  |  |  |
| D8 |  |  |  |  |
| D9 |  |  |  |  |
| D10 |  |  |  |  |

 9. Draw the crystal field splitting for the complex [Co(CN)6]3+