

Chem 151 Drilling Question Set #6
Introduction to Coordination Chemistry

1. If the ions/moleculars listed below become ligands in a complex ion, what would be their names as ligands?
 - a. OH^-
 - b. NO_2^-
 - c. PO_4^{3-}
 - d. NH_3
 - e. CO
 - f. $\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2$

2. Determine the oxidation number of the central metal and name the complex ions in the following
 - a. $[\text{Fe}(\text{OH})(\text{H}_2\text{O})_5]^{2+}$
 - b. $[\text{Co}(\text{NH}_3)_5(\text{H}_2\text{O})]^{2+}$
 - c. $[\text{Mn}(\text{CN})_5]^-$
 - d. $[\text{Cr}(\text{NH}_3)_4\text{Cl}_2]^+$

3. Name the following coordination compounds
 - a. $[\text{Ag}(\text{NH}_3)_2]\text{OH}$
 - b. $[\text{Co}(\text{NH}_3)_5(\text{SO}_4)]\text{Br}$
 - c. $\text{K}_3[\text{Fe}(\text{C}_2\text{O}_4)_3]$
 - d. $\text{Na}_2[\text{Zn}(\text{OH})_4]$

4. Give chemical formulas for the following:
 - a. Tetrachloroferrate(III) ion
 - b. Ammonium dibromobisoxalatocobaltate(III)

- c. Potassium tetracyanonickelate(II)
- d. Tetraaquadichloronickel(IV) sulfate
- e. Tetraamminedichloroplatinum(IV) tetrachloroplatinate(II)