



# Chemistry 4424

## Descriptive Inorganic Chemistry

### Homework Set 7

**Due Wednesday, 13 April 2005, 10:30 AM**

No late homework is accepted. Include your name and student number on your homework. Group discussions of homework problems are permitted but answers must be your own individual response and composition. All homework must be signed and pledged. Include a list of references with your homework citing all written material, including web sites, and oral discussions used in the preparation of your homework assignment.

- 1) Use the Frost diagram from your text, Figure 12.14, to answer the following questions.
  - A. In basic solution, identify any species of iodine that are unstable with respect to disproportionation.
  - B. In basic solution, what pairs of iodine species are unstable with respect to comproportionation?
  - C. How does the oxidizing power of  $\text{IO}_3^-$  change upon going from basic to acidic solution?
  
- 2) Give the IUPAC names for the following complexes.  
(The Further Information Section 1 of your text describes nomenclature)
  - A.  $(\text{NH}_4)_3[\text{Co}(\text{CN})_6]$
  - B.  $\text{Na}_4[\text{Co}(\text{CN})_6]$
  - C.  $[\text{PtCl}(\text{NH}_3)(\text{pyridine})\text{Br}]$
  - D.  $\text{KMnO}_4$
  - E.  $[\text{Os}(2,2'\text{-bipyridine})_3](\text{PF}_6)_2$
  
- 3) Draw pictures to show all the stereoisomers for each of the following complexes. Give the IUPAC name for each isomer.
  - A.  $[\text{Co}(\text{CO})_3\text{Cl}_3]$
  - B.  $[\text{Pt}(2,2'\text{-bipyridine})_2\text{Cl}_2]^{2+}$
  - C.  $[\text{RhCl}_2(\text{NH}_3)_2]^{1-}$