Module 5 - Engaging Activities

I. Determine the oxidation number of the elements in each of the following compounds;

a. H_2CO_3
b. N_2
c. $Zn(OH)_4^{2-}$

II. Identify the species being oxidized and reduced in each of the following reactions:

a. $Cr+ + Sn^{4+} \rightarrow Cr^{3+} + Sn^{2+}$
b. $3Hg^{2+} + 2Fe_{(s)} \rightarrow 3Hg_2 + 2Fe^{3+}$

Performance Tasks

III. Balance the following redox reactions.

1. $VO_4^{3-} + Fe^{2+} \rightarrow VO^{2+} + Fe^{3+}$ in acidic solution
2. $Fe(OH)_3 + OCl^- \rightarrow FeO_4^{2-} + Cl^-$ in acidic solution

IV. Evaluate the following.

1. Calculate the standard cell potential, E°_{cell} for a silver-copper galvanic cell given the following reaction:

   $2Ag^+_{(aq)} + Cu_{(s)} \rightarrow Cu^{2+}_{(aq)} + 2Ag_{(s)}$
2. Regarding the following reaction:

   $F_{2(g)} + 2I^-_{(aq)} \rightarrow 2F^-_{(aq)} + I_{2(s)}$

   a. List the species being oxidized:_____ List the species being reduced:_____
   b. Calculate E°_{cell} for this cell.