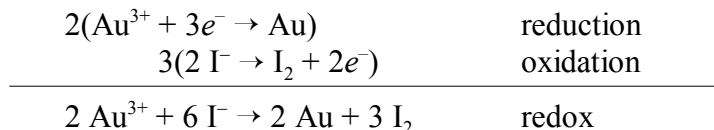
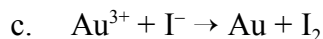
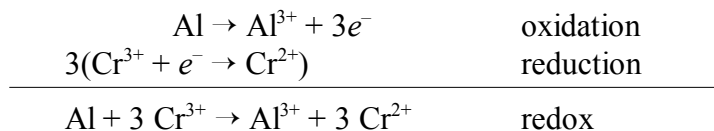
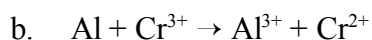
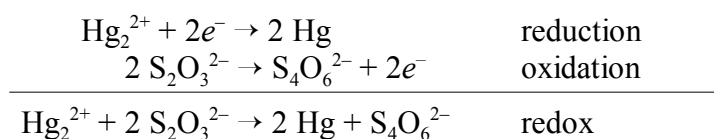
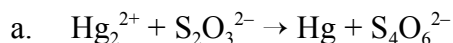


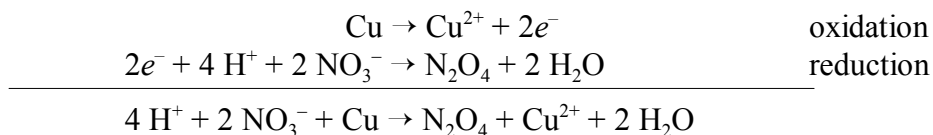
Chem 116 POGIL Worksheet - Week 13 - Solutions
Balancing Redox Equations

Key Questions

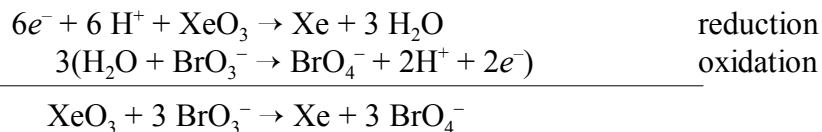
1. For each of the following, separate the skeletal (unbalanced) equation into two half reactions. For each half reaction, balance the elements (mass balance), and then add electrons to the right or left side to make a net charge balance. Identify which half reaction is the oxidation and which is the reduction. Then, multiply each half reaction by an appropriate factor so that the two multiplied half reactions add together to make a balanced redox equation.



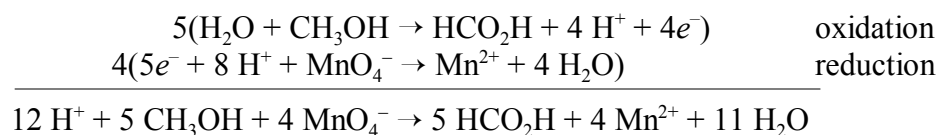
2. Use the ion-electron method to complete and balance the following skeletal redox equations, occurring in either acidic or basic aqueous solution, as indicated. Identify the oxidation and reduction half reactions in each case.



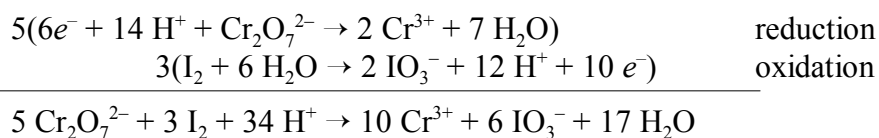
b. In acid, $\text{XeO}_3 + \text{BrO}_3^- \rightarrow \text{Xe} + \text{BrO}_4^-$



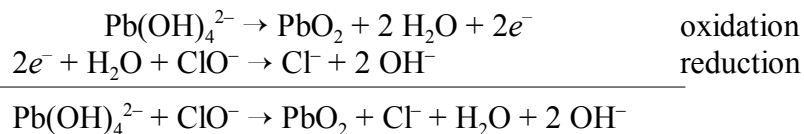
c. In acid, $\text{MnO}_4^- + \text{CH}_3\text{OH} \rightarrow \text{Mn}^{2+} + \text{HCO}_2\text{H}$



d. In acid, $\text{Cr}_2\text{O}_7^{2-} + \text{I}_2 \rightarrow \text{Cr}^{3+} + \text{IO}_3^-$



e. In base, $\text{Pb}(\text{OH})_4^{2-} + \text{ClO}^- \rightarrow \text{PbO}_2 + \text{Cl}^-$



f. In base, $\text{SO}_2 + \text{MnO}_4^- \rightarrow \text{SO}_4^{2-} + \text{MnO}_2$

