

Study Guide for chapter 8

1. Daniell cell. What are the electrodes? In which direction does the electron flow? How about the direction of the ions through the membrane? What are the half reactions? What is the net reaction? What positive and negative ions are in the solution?
2. What is emf? What is the net reaction in the Daniell cell if the counter potential is set to be greater than emf?
3. What is anode? What is cathode? The convention is to place the anode on the left-hand side.
4. Standard electrode potential. What is being used as a reference electrode? Why is Pt being used as the anode material? If the hydrogen electrode is used as anode, the measured emf is called the standard reduction potential. If the hydrogen electrode is used as cathode, the measured emf is called the standard oxidation potential.
5. Gibbs energy change in a cell. Study Eqns (8.2) and (8.3) which link the emf of the cell to the Gibbs free energy change.
6. Equilibrium constant of the overall reaction in the cell. Study Eqns (8.7) to understand how the equilibrium constant is related to the emf of the cell.
7. Nernst equation. Study Eqn (8.13) to understand how emf changes as concentrations deviate from the standard condition.
8. Nernst potential. What is it? What is the direction of the Nernst potential?