

## Chapter 1 Homework Questions.

Answer each question thoroughly and completely. Write answers on a separate paper than this assignment sheet. This sheet shall be stapled to the front of the homework.

1. For the two electrode materials given:
  - I. Calculate the Standard Cell Potential
  - II. Calculate the Theoretical Capacity
  - III. Calculate the Theoretical Energy
  - IV. Give the reaction mechanism (Electro-Chemical Reaction)

These are demonstrated in section 1.4 of the textbook. Show all work and equations.

|   | Anode Material | Cathode Material |
|---|----------------|------------------|
| A | Li             | SO <sub>2</sub>  |
| B | Zn             | MnO <sub>2</sub> |
| C | Li             | FeS <sub>2</sub> |
| D | Pb             | PbO <sub>2</sub> |
| E | MH             | Ni Oxide         |
| F | Li(Al)         | FeS <sub>2</sub> |

2. For each chemistry in problem 1, what percent of the theoretical energy does each practical battery have?
3. What are the three major components of any battery cell and why are each important to the operation of the cell?
4. How is a Reserve Battery different from the other types of batteries?