Name:_____ School:_____

Chem 30 Unit 7 Hand In Assignment #2 (7.4-7.5)

1. By what mass (in grams) will a chromium cathode increase when it is coupled to a magnesium half-cell in which the magnesium anode loses 1.53 grams? (assuming chromium ions in solution are Cr^{3+}). 6 marks

2. Determine whether the following reactions will occur by determining the voltage produced. (3 marks each)

a. $Ag(s) + HCl(aq) \rightarrow$

b. $Mg(s) + FeSO_4(aq) \rightarrow$

3. The most common method of producing bromine involves oxidizing bromine ions (Br^-) to bromine liquid (Br_2) using chlorine gas (Cl_2). What is the E for this reaction? 2 marks

Name:_____ School:_____

4. What reaction (oxidation or reduction) occurs at an anode of . . .

a. an electrochemical cell (1mark)

b. an electrolytic cell (1 mark)

5. An iron bar is to be electroplated with zinc. Draw a diagram to do so and: 10 marks

- Identify what will act as the two electrodes for the cell
- Identify each electrode as either the anode or cathode
- Write the half-reactions occurring at each electrode
- Identify a solution that would make a suitable electrolyte for this cell
- Identify which electrode will be attached to the negative post of the battery and which will be attached to the positive post, and explain.
- Identify the flow of electrons.