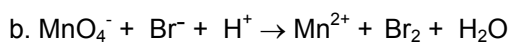
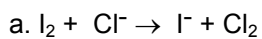


Unit 6: Redox Reactions and ElectrochemistryAssignment 3 Electrochemistry

1. Use half-reaction potentials to predict whether the following reactions are spontaneous or nonspontaneous in aqueous solutions. If the reaction is spontaneous, write a balanced equation and calculate the total voltage.

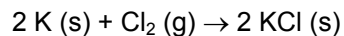


2. Compare an electrochemical cell with an electrolytic cell by completing the following table:

	Electrochemical Cell	Electrolytic Cell
Energy Conversion		
Spontaneous Chemical Reaction?		
Value of E° (positive or negative)		

Name: _____

3. Potassium reacts with chlorine to produce the ionic compound potassium chloride:



- a. Write a balanced half-reaction for the oxidation reaction.

 - b. Write a balanced half-reaction for the reduction reaction.
4. What reaction (oxidation or reduction) occurs at an anode of . . .
- a. an electrochemical cell
 - b. an electrolytic cell
5. An iron bar is to be electroplated with zinc.
- 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.

A fully labeled diagram may be a useful way to answer these questions.

