ELECTROCHEMISTRY

NAME _____ SECTION_____

Instructions: You and your partner will be working with a computer simulation that covers electrochemistry, please discuss each question with your partner and write down your best answer.

Section 1. Activity Series

http://www.chem.iastate.edu/ChemEdGroup/GREENBOWE/sections/projectfolder/flashfiles/redox/home.html

Activity 1

1) To start the animation click start and then activity one. You will see four ionic solutions. Pick one of the four metals and follow the instructions on the screen. Please write down your observations (e.g. what reactions occurred) Repeat this procedure for the other three metals and make sure to write all your observations down.

2) Considering magnesium, zinc, copper, and silver

a) Which of the four metals you tested is the most reactive? Explain why.

b) Which is the least reactive? Why?

c) Arrange the metals in order of increasing reactivity (from least reactive to most reactive)

d) Locate the magnesium, zinc, copper, and silver in the standard reduction potential table. Is there a pattern between the reactivity of metals and the table? Explain why or why not

Section 2. Electrochemical cells

Oxidation: A process in which a substance loses one or more electrons
Reduction: A process in which a substance gains one or more electrons
Anode: an electrode at which oxidation occurs
Cathode: an electrode at which reduction occurs

Activity 2

http://www.chem.iastate.edu/ChemEdGroup/GREENBOWE/sections/projectfolder/flashfiles/electroChem/volticCell.html

1. Begin by assembling a zinc-copper cell. Please be sure to follow the instructions on the screen.

2. Complete the following table

	Zinc	**Copper**
Is there an electron transfer between species?		
Mark the species that loses electrons		
Write down the oxidation half reaction under the species that is undergoing oxidation.		
Mark the species that gains electrons		
Write down the reduction half reaction under the species that is undergoing reduction.		
Mark the anode		
Mark the cathode		

3. Is this a spontaneous reaction? Explain your reasoning.

4. Write the complete balanced equation for the reaction.