

Name \_\_\_\_\_

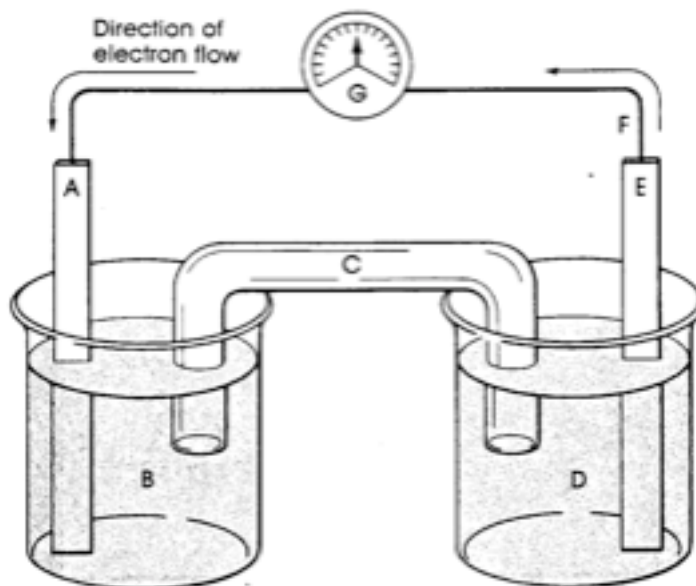
Period \_\_\_\_\_

**Redox Reactions #4**  
**Electrochemical Cells**

- 1) What is an electrochemical cell?
  
- 2) What chemical change happens at the anode?
  
- 3) What chemical change happens at the cathode?
  
- 4) What is the purpose of a salt bridge?
  
- 5) What is the unit of electric potential?
  
- 6) Which electrode is the positive electrode in an electrochemical cell?
  
- 7) Which electrode is the negative electrode in an electrochemical cell?
  
- 8) Which color wire is used to indicate the positive electrode? The negative electrode?
  
- 9) What is true of all reactions whose EMF is a positive number?
  
- 10) Draw an electrochemical cell based on the reaction between Zinc and Silver. Write the overall spontaneous reaction that occurs and calculate the EMF for the cell. Label the anode, cathode, salt bridge, show the ion flow, flow of electrons, positive electrode, and negative electrode. Show which electrode grows and which one shrinks.

11) Consider the cell pictured below.

- Label the anode and the cathode.
- If the salt in the salt bridge is  $\text{KNO}_3$  show the direction that that  $\text{K}^+$  and  $\text{NO}_3^-$  ions flow.
- If the two solutions are  $\text{Zn}(\text{NO}_3)_2$  and  $\text{Mg}(\text{NO}_3)_2$  calculate the EMF of the cell.
- Label which electrode (A or E) is Zinc and which is Magnesium.
- Label which solution (B or D) is  $\text{Zn}(\text{NO}_3)_2$  and which is  $\text{Mg}(\text{NO}_3)_2$ .



12) Calculate the EMF for the following reactions using Standard Reduction Potentials.

