NAME: **HONORS CHEMISTRY**

SECTION: The Voltaic Cell

Answer the questions below using the diagram below and a table of Standard Reduction Potentials.

1. Which is the more easily oxidized metal: aluminum or lead?

1. What is the role of the salt bridge?
2. Which electrode is the anode? \_\_\_\_\_\_\_\_\_\_\_\_\_
3. Which electrode is the cathode?\_\_\_\_\_\_\_\_\_\_\_\_\_
4. a) What is the balanced equation showing the spontaneous reaction that occurs?
5. What is the maximum voltage that the above cell can produce?
6. Use an arrow to show the direction of electron flow in the wire.
7. What is the voltage when the salt bridge is removed? \_\_\_\_\_\_\_\_\_
8. Which electrode is becoming more massive? Al Pb
9. Which electrode is becoming less massive? Al Pb
10. What is happening to the concentration of aluminum ions? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. What is happening to the concentration of lead(II) ions? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. What is the voltage in this cell when the reaction reaches equilibrium?
13. Identify the positive electrode. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. Identify the negative electrode. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_