

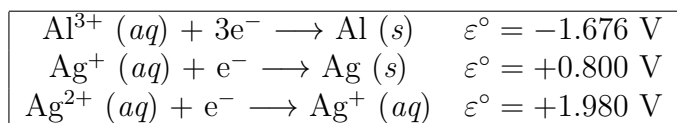
CHM 112 (Quiz 10)

Name_____

Section_____

Show all work and draw a box around your final answer.

1. A galvanic cell is to be prepared from an aluminum electrode, a silver electrode, and one molar solutions of $\text{Al}(\text{NO}_3)_3$ and $\text{Ag}(\text{NO}_3)$.



- a. Draw the electrochemical cell with all necessary components. Clearly label the electrodes, solutions, potentiometer, salt bridge, etc.

- b. Using standard reduction potentials, determine which electrode is the anode and which electrode is the cathode. Label these on your diagram above.

- c. On your diagram label the direction of electron flow.

- d. Write a balanced chemical equation for the cell reaction which is spontaneous as written.

- e. Now diagram the cell using **standard cell notation**.

f. A current of 1.75 A is observed to flow through the wire for 2.5 hours. How many moles of electrons pass through the wire during this time?

g. Which electrode gains mass: Ag or Al (circle one)?

h. The electrode that decomposes initially weighs 20.00 grams. What is its mass after the 1.75 A current flows for 2.50 hours.