* VII-2 _____C _____NC
** VII-3 _____C _____NC

Chemistry 152
Worksheet 9

Name: _____

*A. (2.0 pts.) Determine the mass of cobalt metal deposited by the following reaction if 6.75 amperes of current is passed through the electrolytic cell for 40.0 min. (At. Wt. Co=58.9amu)

**B. (4.0 pts.) Indicate the products expected at each electrode for the following electrolysis reactions involving inert electrodes.

	Anode	Cathode
1. $RhCl_2(aq)$ (Rh lies **below** Zn)		
2. KBr(molten) (K lies **above** Zn)		
3. $FeSO_4(aq, H^+)$ (Fe lies **above** H)		
4. $AgC_2H_3O_2(aq)$ (Ag lies **above** Zn)		

C (2.0 pts.) A neutral aqueous solution of $Ni(NO_3)_2$ is electrolyzed in a typical electrolytic cell. Write the balanced equation for the electrolysis reaction (Ni lies below Zn). If 4.26 amperes of current are passed through the cell for 6.00 hours, determine the mass of Ni and volume of O_2 (at STP) produced at their respective electrodes. (At.Wt. Ni=58.7, O=16.0, N=14.0, and H=1.01amu)

D. (1.0 pts.) An aqueous solution of a gallium salt was electrolyzed for 30.0 minutes with a current of 6.00 amperes. If this electrolysis produced 2.60g of Ga metal at the cathode, determine the charge on the gallium ion in this salt. (At.Wt. Ga=69.7amu)

E. (1.0 pts.) Determine the time in minutes required for 5.00 grams of zinc metal to be deposited in an electrolytic cell with a constant current of 8.75 amperes. The cell contained an aqueous solution of zinc nitrate. (At.Wt. Zn=65.4amu)