 Pt is being both oxidized an reduced Pt is the oxidizing agent Pt is an inert electrode used to conduct electrons into the external circuit Pt is the reducing agent 	
Question 2	4 pts
Why might you use an inert electrode in your standard cell set-up? Your half-reaction involves aqueous ions being reduced into metal Your half-reaction does not include a solid state conductor Your half-reaction has the solid on the product side of the reaction	
Your half-reaction has the solid on the reactant side of the reactionQuestion 3	6 pts
If a scientist wants to plate out the largest mass of metal possible in the shoof time using his 5 amp electroplating system, which of these solutions sho as his plating solution? Hint: consider both the mass and oxidation states in the context of Faraday's law.	-
 Co(NO₃)₃ Mg(NO₃)₂ KNO₃ 	
Question 4	4 pts
One Faraday (the F constant we use in Faraday's law) represents the total charge on an individual electron the standard potential of one mole electron	
the current delivered by an electron over one minute the total charge on one mole of electrons Question 5	6 pts
A superior little league baseball bat is made by electroplating solid cobalt of surface from a concentrated cobalt(II) chloride solution. If 3.80 amps of curfor a total of two and a half days, what is the mass of the solid cobalt surfactor be clear, you are reducing cobalt(II) ions in solution to form cobalt solid. 376.0 g 752.0 g 4.252 g	n a metal rent is passed
Question 6 Suppose it takes 291 seconds to electroplate 65.3 mg of chromium metal fit concentrated aqueous solution of chromium ions with an average current of the what is the oxidation state (the charge) of the chromium ions in solution? +6 +1	
 +3 +2 +5 +4 	
Question 7 Calculate the voltage of the following cell at nonstandard conditions:	6 pts
Cu Cu ²⁺ (0.150 M) Cu ²⁺ (.0120 M) Cu Convert your final answer to mV. 64.9 mV -32.4 mV -16.2 mV 32.4 mV	
Question 8 Consider the following cell that is set up at standard conditions: Cu Cu ²⁺ (1 M) Cu ²⁺ (1 M) Cu	5 pts
Cu Cu ²⁺ (1 M) Cu ²⁺ (1 M) Cu If you were to increase the copper ion concentration in the cathode compar would happen to the overall cell potential (<i>E</i>)? the voltage will remain unchanged an stay at zero	rtment, what
the voltage will remain unchanged an stay at zero the overall potential will decrease slightly becoming negative the overall potential will increase slightly becoming positive	
Question 9 Consider the following non-standard cell with an unknown concentration of cathode compartment: Mn Mn ²⁺ (0.20M) Mn ²⁺ (? M) Mn	5 pts
Mn Mn ²⁺ (0.20M) Mn ²⁺ (? M) Mn The voltage of this cell is measured to be +8.9 mV. What is the concentration the cathodic solution? 0.14 M 3.5 M	on of Mn ²⁺ in
 3.5 M 140 M 0.20 M 0.40 M 	
O 0.10 M Question 10	4 pts
How much energy (electrical work) is produced from a redox reaction with a +1.75 V, and passing 3 moles of electrons? Assume the fully balanced reaction. An example of a generic reaction (before cancelling out the electric would be: 3A + B + 3e ⁻ → 3C + D + 3e ⁻ 1013 kJ 167 kJ	ction is run to
○ 167 kJ○ 338 kJ○ 507 kJ	
 ○ cathode ○ anode Question 12 You turn on a flashlight containing brand new NiCad batteries and keep it liber two. Which of the following can be considered TRUE regarding the chembres batteries? I. The chemical reaction is spontaneous II. E _{cell} > 0 III. The overall redox reaction in the battery is at equilibrium IV. E _{cell} is substantially decreasing during this time All but III	
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