Reading Assignment

Complete reading Chapter 16 (all sections) and sections 17.1 through 17.3. Then read Chapter 20. Read sections 20.7 (Batteries and Fuel Cells) and 20.8 (Corrosion) for interest only; i.e., you will not be responsible for this material on any test.

Test 3

The third test will be given on Friday, May 5th. It will cover assigned sections of Chapters 16 and 17.

Patriot’s Day Week & Chancellor’s Inauguration Week

Monday, April 17th is Patriot’s Day and there will be no classes. Therefore, the cycle of discussions for this assignment will run from Wednesday, April 19th through Monday, April 24. Normally, when we have a Monday holiday, we cancel all labs for the week. However, classes scheduled for after 3 pm on Wednesday, April 26 will be canceled to allow students and other members of the university community to attend the Concert for Students featuring Kanye West. This will interfere with the Wednesday lab session. Therefore, the Wednesday lab section (and that section only) will do Experiment 10 one week early on Wednesday, April 19th. This will be the only lab section run during the week of April 17th.

Homework Assignment

This assignment will be covered in discussions running from Wednesday, April 19 through Monday, April 24.

  Chapter 16: 16.91, 16.93, 16.95, 16.97, 16.99, 16.101, 16.103, 16.113
  Chapter 17: 17.11, 17.13, 17.15, 17.17, 17.19, 17.23, 17.25, 17.29

Also, do the Additional Problems on the following page.
Additional Problems: These problems use information from the Table of Conjugate Acid-Base Pairs, available as a Handout on the web site. Worked-out answers are posted on the web site under Solutions.

1. Write net ionic equations for all equilibria that lie more than 50% to the right when the following pairs of solutions are mixed. Assume adequate amounts of each reagent for all possible equilibria.
   a. $\text{H}_3\text{PO}_4(aq) + \text{NaHCO}_2(aq)$  \(\{\text{NaHCO}_2 = \text{sodium formate}\}\)
   b. $\text{H}_2\text{C}_4\text{H}_6\text{O}_6(aq) + \text{NaHCO}_3(aq)$  \(\{\text{H}_2\text{C}_4\text{H}_6\text{O}_6 = \text{tartaric acid}\}\)
   c. $\text{H}_2\text{S}(aq) + \text{Na}_2\text{SO}_3(aq)$
   d. $\text{Na}_3\text{PO}_4(aq) + \text{CH}_3\text{CO}_2\text{H}(aq)$
   e. $\text{NaHC}_8\text{H}_4\text{O}_4(aq) + \text{NaOCl}(aq)$  \(\{\text{NaHC}_8\text{H}_4\text{O}_4 = \text{sodium hydrogen phthalate}\}\)

2. What is the pH of a 0.10 M $\text{Al(NO}_3)_3$ solution?  \{Answer: pH = 2.93\}

3. Calculate the concentrations of all species in 0.100 M 0-phthalic acid, $\text{H}_2\text{C}_8\text{H}_4\text{O}_4$. For simplicity, abbreviate the acid $\text{H}_2\text{Ph}$.  \{Answers: \([\text{H}_3\text{O}^+] = [\text{HPh}^-] = 0.0108 \text{ M}; [\text{H}_2\text{Ph}] = 0.089 \text{ M}; [\text{Ph}^2-] = 3.1 \times 10^{-6} \text{ M}; [\text{OH}^-] = 9.3 \times 10^{-13} \text{ M}\}\