

**Monday, March 12, 2018**

- Chapter 16 Review Sheet
  - **In Textbook:** pg. 725-727 #84, 85, 87, 88, 89, 94, 95, 98, 101
- Chapter 16 MC Review
- Buffer-Titration  $K_a$  Challenge Problem (on back)
- **Homework #16-10:** Listed Textbook Problems, MC & Challenge Problem

**Tuesday, March 13, 2018**

- **Mrs. Bailey- Dr. Casagrande is at Science Olympiad**
- Chapter 16 Review Sheet
  - **In Textbook:** pg. 725-727 #102 (NOTE: abbreviate cacodylic acid as CacH), 113, 115, 117, 118, 120
  - **Optional Study Guide:** pp. 345-347 #1, 4, 7, 9, 11, 12, 17, 22, 24, 25, 27, 32; pp. 359-361 #4, 12, 13, 16, 17, 18, 23 (**mandatory**) (on back)  
\*\* Underlined questions are *highly* recommended b/c these types of questions were not in text book review. The solution to pp. 359-361 #23 will be online.
- CuBr in CN Challenge Problem (on back)
- **Homework #16-11:** Listed Textbook Problems #23 & Challenge Problem

**Wednesday, March 14, 2018 (Room 382)**

- Qualitative Analysis Demo/WS
- **Homework:** Study for Ch. 16 Test

**Thursday, March 15 2018**

- Ch. 18.1-18.4: Spontaneous Processes; Entropy; Second Law of Thermodynamics
- **Test Chapter 16: Acid-Base Equilibria & Solubility Equilibria**
- **Homework #18-1:** Problems pg. 790 #2, 4, 5, 10, 12, 13

**Friday, March 16, 2018**

- Ch. 18.5: Spontaneity & Gibb's Free Energy
- **Homework #18-2:** Problems pg. 790-793 #17, 19, 43, 44, 60

**Monday, March 19, 2018**

- Ch. 18.6-18.7: Free Energy and Equilibrium; Living Systems
- **Homework #18-3:** Problems pg. 791 #23-31 (odd), 35, 36; Thermodynamics Review WS

**Tuesday, March 20, 2018**

- Chapter 18 Review Sheet
  - Chapter 18 MC Review (18-20 are challenge questions)
- **Homework #18-4:** MC & Thermodynamics Review WKS

**Wednesday, March 21, 2018 (Room 382)**

- Chapter 18 Review
  - **In Textbook:** Problems pg. 792 #28, 38(a & b), 52, 54, 56, 57, 61, 62, 64, 66, 68
  - **In Study Guide:** pp. 379-381 #2, 6, 7, 9, 12, 13; pp 385-386 #3, 6, 8, 10, 12, 13  
\*\* Underlined questions should be done b/c these types of questions were not in text book review.
- **Homework #18-5:** Textbook Problems

**Thursday, March 22, 2018**

- Go over Ch. 18 Review
- Ch. 19.1: Redox Reactions

**Friday, March 23, 2018**

- **Test Chapter 18: Entropy, Free Energy & Spontaneity**
- **Homework #19-1:** Problem pg. 832 #19.1

Looking Ahead: The Chapter 19 Test is scheduled for Thursday, April 12. After that we will begin reviewing for the AP exam, which is Monday, May 7.

**Buffer/Titration/ $K_a$  Challenge Problem:** An unknown student in an unknown city in an unknown school titrates an unknown amount of weak acid dissolved in an unknown amount of water with a strong base of unknown concentration. After adding 20.00 mL of strong base, the pH is 5.00. The student continues the titration, reaching the equivalence point after 26.00 mL base is added. What is  $K_a$  for the acid? [Hint: determine  $A^-/HA$  when  $pH = 5.00$ .] [Answer:  $3.3 \times 10^{-5}$ ]

**\*23. What is the minimum concentration of aqueous  $NH_3$  required to prevent  $AgCl(s)$  from precipitating from a 1.0 L of solution prepared from 0.20 mol of  $AgNO_3$  and 0.010 mol of  $NaCl$ ?** This question couples the slightly soluble salt,  $AgCl$ , with the formation of the complex ion,  $[Ag(NH_3)_2]^+$ . At equilibrium, all of the  $Ag^+$  is essentially present as  $Ag(NH_3)_2^+$ . This is NOT an ICE problem, just a straight equilibrium.

**Challenge Problem From Zumdahl & Zumdahl 9<sup>th</sup> Edition p. 785:**

**99.** The copper(I) ion forms a complex ion with  $CN^-$  according to the following equation:



- Calculate the solubility of  $CuBr(s)$  ( $K_{sp} = 1.0 \times 10^{-5}$ ) in 1.0 L of 1.0 M  $NaCN$
- Calculate the concentration of  $Br^-$  at equilibrium
- Calculate the concentration of  $CN^-$  at equilibrium