ACID AND BASE EQUILIBRIA
Chapter 16 (mostly Sec 1-7) – AP Chem
CQ - For K_a and K_b values consult appendix

1. The general representation of an acid that is dissolved in water. What does the author mean when they say that this represents "a competition for the proton between the two bases water and A^{-1}."

2. Explain LeChatelier's Principle.

3. A weak acid (when it dissociates) will yield a _____conjugate base.

4. A strong acid (when it dissociates)will yield a _____conjugate base. (or low affinity for a proton)

5. What is an oxyacid (oxoacid) and give an example.

6. What does the ion-product constant always equal?

7. What is autoionization?

8. Calculate the $[H^{+1}]$, $[OH^{-1}]$, and the pOH when the pH = 6.6.

*******UNDERSTAND AND THINK; DON'T JUST MEMORIZE THE SOLUTIONS TO PROBLEMS (especially the acid/base equilbria problems :]***

9. Why is it important to figure out the SPECIES in the dissociation reaction?

10. Why are HCl and HNO_3 strong acids?

11. After finding the major species and listing the equilibrium expression, what is the next step in calculating the pH of a weak acid solution?

12. Calculate the pH for a 0.25 M solution of NH_3 ($K_B = 1.8 \times 10^{-5}$). Write the dissociation of ammonia and water.

13. When the concentration of acetic acid solution is 0.014M and the $K_A = 1.8 \times 10^{-5}$, then what is the ionic concentration of the H^+ ion?

14. When given the molarity of an acid or base solution, why can't you just substitute the molarity of the solution for $[H^{+1}]$ or $[OH^{-1}]$?

15. A .010 M ammonia solution is 4.3% ionized. What is the $[OH^{-1}]$ and of $[NH_4^{+1}]$?

16. Calculate the concentration of the H^{+1} in .014 M acetic acid ($K_a = 1.8 \times 10^{-5}$)

17. Calculate the $[OH^{-1}]$ in 0.10 M $Sr(OH)_2$.

18. <u>Write the balance molecular, ionic equations, and net ion equation for the following:</u>

A. solid iron (III) sulfide is added to a dilute solution of sulfuric acid. (hint: sulfuric acid is a SA, so dissociate all of it using Arrhenius' theory)

B. Solid potassium hydroxide is added to a solution of sulfuric acid.