Chemistry 106, Chapter 13 Objectives

Terms:
Arrhenius acid  neutral solution
Arrhenius base  pH
Bronsted-Lowery acid  acidosis
Bronsted-Lowery base  alkalosis
amphiprotic  strong acid
Kw=[H\(^+\)][OH\(^-\)] = 1 x 10\(^{-14}\)  strong base
pH + pOH = 14  weak acid
(K\(_a\))(K\(_b\)) = 1 x 10\(^{-14}\)  weak base
acidic solution  polyprotic acid
basic (alkaline) solution  salt

You should be able to:
1. complete acid-base reaction equations,
2. pick out conjugate acid-base pairs,
3. given an acid write the formula for the conjugate base and given a base write the formula for the conjugate acid,
4. define acidic, basic, and neutral solutions in terms of [H\(^+\)] and pH,
5. make conversions between [H\(^+\)], [OH\(^-\)], pH, and pOH,
6. list the strong acids and bases,
7. write the dissociation equations for any acid or base,
8. calculate pH or pOH for a strong acid or base,
9. write the equilibrium constant expression for a weak acid or base,
10. use K\(_a\) or pK\(_a\) to rank acids in order of increase strength, and do the same for bases using K\(_b\) or pK\(_b\),
11. calculate [H\(^+\)] for weak acid solutions,
12. calculate the percent ionization for a weak acid,
13. calculate K\(_a\) for a weak acid given the appropriate data,
14. calculate [H\(^+\)], pH, [HA\(^-\)], and [A\(^2-\)] for a polyprotic weak acid in solution,
15. given the K\(_a\) for an acid calculate K\(_b\) for the conjugate base (and vice versa),
16. write dissociation equations for salts,
17. indicate if an anion is a base or a spectator ion, if it's a base write the equation showing the reaction of the anion with water,
18. indicate if a cation is an acid or a spectator ion, if it's an acid write the equation showing the reaction of the cation with water,
19. Given a salt indicate if a solution of that salt would be acidic, basic, or neutral,
20. indicate if the solution of an amphiprotic anion would be acidic, basic, or neutral.