CHAPTER 14

DEFINITIONS

**Arrhenius acid** - any compound that ionizes (dissociates) in water to produce H\(^+\) ions.

**hydronium ion** (H\(_3\)O\(^+\)) - hydrated proton in aqueous solution.

**monoprotic** - an acid with 1 ionizable hydrogen.

**diprotic** - an acid with 2 ionizable hydrogens.

**triprotic** - an acid with 3 ionizable hydrogens.

**Arrhenius base** - any compound that ionizes (dissociates) in water to produce OH\(^-\) ions.

**hydroxide** - the polyatomic ion OH\(^-\).

**neutralization** - a term commonly used to describe the reaction of a solution of a protonic acid with a stoichiometric amount of a solution of a hydroxide base.

**Brönsted-Lowry acid** - any species that can give up a proton to another species (i.e., a proton donor).

**Brönsted-Lowry base** - any species that can combine with a proton (i.e., a proton acceptor).

**conjugate base** - everything that remains of the acid molecule after a proton is lost.

**conjugate acid** - the product formed when the proton is transferred to the base.

**conjugate acid-base pair** - two substances related to each other by the donating and accepting of a single proton.

**amphoteric** - species that can act as either acids or bases (i.e., they can either gain or lose a proton).

**ion-product constant for water** (K\(_w\)) - the equilibrium constant measuring the autoionization of water.

**pH scale** - a logarithmic scale to express the hydronium ion concentration [derived from the French puissance d'hydrogène ("power of hydrogen") and refers to the power of 10 (the exponent) used to express the molar H\(_3\)O\(^+\) concentration

**acid-base indicators** - substances that change color in a specific pH range.

**acid-dissociation constant** (K\(_a\)) - the equilibrium constant measuring the amount of dissociation (ionization) of an acid.

**percent dissociation** - another useful measure of the strength of a weak acid defined as the concentration of the acid that dissociates divided by the initial concentration of the acid times 100%.

**base-dissociation constant** (K\(_b\)) - the equilibrium constant measuring the amount of dissociation (ionization) of a base.

**salt** - simply another name for an ionic compound--produced in the neutralization of a protonic acid with a hydroxide base.

**hydrolysis** - the reaction between an ion and water that affects the pH of the solution.

**hydrolysis constant** (K\(_h\)) - the equilibrium constant measuring the amount an ion impacts the pH of a solution.

**Lewis acid** - any species (molecule or ion) that can accept a pair of electrons.
**Lewis base** - any species (molecule or ion) that can donate a pair of electrons.