Chapter 14 and 15 Objectives

Chapter 14

- Students will be able list the five characteristics of both acids and bases.
- Given a Periodic Table of Elements, students will be able to name (write) binary acids and oxyacids
- Students will be able to define an Arrhenius acid and base.
- Students will be able to define a Brønsted-Lowry acid and base.
- Given an acid-base chemical reaction, students will be able to label the acid, base, conjugate acid, and conjugate base.
- Student will be able to define and give an example of an amphoteric substance.
- Given an acid and a base, the student will be able to predict (write) theproducts for the chemical reaction (neutralization reaction) and identify the salt.
- Students will be able to label monoprotic, diprotic, and triprotic acids.
- Students will be able to explain the differences between a strong acid/base and a weak acid/base with regard to their ionization.

Chapter 15

- Students will be able to write a balanced chemical reaction for the self-ionization of water.
- Given the product ion constant for water (K_w), the formula for the ionization constant for water ($K_w=[OH^-][H_3O^+]$), the student will be able to solve for the missing concentration.
- Given the pH, pOH, $[H^+]$ or $[OH^-]$ of a solution, students will be able to classify (label) each as an acid, base or neutral.
- Given the formula $pH= -\log[H^+]$ and the concentration of hydrogen ions, the students will be able to calculate the pH.
- Given the formula $pOH= -\log[OH^-]$ and the concentration of hydrogen ions, the student will be able to calculate the pOH.
- Students will be able to calculate pOH, pH, $[H^+]$, $[OH^-]$ given any of the one values (use the pH square).
- The student will be able to describe how to titrate a strong acid and strong base.
- Students will be able to perform titration calculations. This involves Molarity and stoichiometry.