

## CHE 101 Chapter 3 - Study Guide

Terms: Elements, Compounds, Ionic, Molecular, Covalent, Anion, Cation, Metal, Non-metal, Metalloid, Alkali metals, Alkaline earth metals, Halogens, Noble gases, Transition elements, Representative elements.

### 1. Periodic Table

- a. Know the Properties of Metals vs. Non-metals.
- b. Memorize the 7 metalloids (B, Si, Ge, As, Sb, Te, Po/At)
- c. Identify metals, metalloids, and non-metals.
- d. Memorize the 7 diatomic elements.
- e. Memorize the 2 liquid elements.
- f. Memorize the 11 gaseous elements.
- g. Memorize Alkali metals, alkaline earth metals, halogens, noble gases, transition elements, representative elements. (Figure 3.3)

### 2. Define and differentiate between:

- a. Elements and Compounds
- b. Elements, Compounds and Mixtures
- c. Ionic and Molecular/Covalent compounds (Figure 3.5 and Figure 3.6)
  1. Molecules vs. Lattice
  2. Share  $e^-$  vs. Gain/lose  $e^-$
  3. Nonmetal-nonmetal vs. Metal-nonmetal
  4. Does not conduct electricity vs. Conduct electricity
  5. Weak bonds vs. Strong bonds

### 3. Chemical Formula's (Figure 3.9):

- a. Understand the notation and symbols used in chemical formula's and what they represent.
- b. Lower case vs. upper case.
- c. Subscripts = number of atoms in the molecule.
- d.  $()$  = group of atoms, subscripts outside the  $()$  apply to all elements inside the  $()$ .
- e. Numbers in front = how many molecules you have.