**Chem 1**

**Exam 2 Review Sheet**

**The breakdown of the exam will be as follows:**

Multiple Choice 20 pts.

Periodic Table 12 pts.

Atomic Structure Problems 15 pts.

Electron Configuration Problems 24 pts.

Periodic Trends Problems 20 pts.

91 pts.

**Exam Material**

Periodic Table

* Know which elements are metal, semimetals, and nonmetals
* Know which elements are representative, transition, and inner transition elements
* Understand the properties of metals, semimetals, and nonmetals
* Understand how and why the periodic table is organized into groups (columns) and periods (rows)

# Atomic Stucture

* Be able to define the following: atom, electrons, protons, neutrons, atomic number, mass number, atomic mass, isotope, ion, cation, anion
* Be able to write the symbols for isotopes
* Be able to calculate the average atomic mass of an element given the isotopes and percent abundances
* Be able to tell the symbol and name of an ion given the number of electrons lost or gained
* Be able to determine the number of protons, neutrons, and electrons in an ion

**Energy and Electron configurations**

* Know what the following mean: Aufbau principle, Pauli exclusion principle, Hund’s rule, electron configuration, orbital diagram
* Know what the Aufbau principle, the Pauli exclusion principle, and Hund’s rule state
* Know how to write an electron configuration and draw an orbital diagram for an element (Know the order to which energy levels and sublevels are filled and how many electrons can fit in each)

**Periodic Trends:**

* Know what the following mean: valence electron, electron dot structure, ion, atomic size, ionization energy, electronegativity, periodic law
* Be able to figure out the number of valence electrons and draw an electron dot structure for a representative element
* Be able to predict the orbital diagrams for ions of representative elements and tell which noble gas they resemble
* Know the periodic and group trends for atomic size, ionization energy and electronegativity
* Be able to arrange elements in the same groups or periods in order of periodic trends.