**Honors Chemistry**

**Exam 2 Review Sheet**

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

Multiple Choice 20 pts.

Periodic table 18.pts.

Atomic Structure Problems 15 pts.

Electrons in atoms problems 43 pts.

Periodic Trends Problems 20 pts.

 116 pts.

**Exam Material**

Periodic Table

* Understand the organization of the table into groups and periods and be able to tell me the group number and period number for elements using a periodic table
* Be able to classify elements as metals , nonmetals, and semi-metals and representative, transition and inner transition by using a periodic table that will not be color-coded

**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 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: Electromagnetic radiation, Continuous spectrum, emission spectrum, wavelength, frequency, quantized, Aufbau principle, Pauli exclusion principle, Hund’s rule, electron configuration
* Understand why continuous spectra and atomic emission spectra appear.
* Know how to convert between energy, wavelength, and frequency using the formulas and constants
* 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)
* Be able to assign quantum numbers to electrons and know what each quantum number stand for

**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.