**Study Guide Chemistry – Exam #1**

* Give a brief history of how chemistry began.
* List some new materials produced by chemists.
* Describe the scientific method of problem solving.
* List some values of the scientific method of problem solving.
* Describe the difference between hypothesis, theory, and scientific law.
* Explain the necessity for experimental controls.
* Calculate values from measurements.
* List common SI units of measurement and common prefixes used in the SI system.
* Distinguish mass, volume, and density from one another.
* Describe Dalton’s atomic theory and its significance in the study of matter.
* Infer a conceptual model of the structure of an atom, including the properties of the major subatomic particles.
* Demonstrate the relationship between the atomic mass of an element and the isotopes of that element.
* Give a short history of how the concept of the atom developed.
* Describe the contributions of Democritus and Dalton to the atomic theory.
* Summarize Dalton’s atomic theory and explain its history development.
* Explain what isotopes are.
* Define atomic number and mass number, and describe how they apply to isotopes.
* Given the identity of a nuclide, determine its number protons, neutrons, and electrons.
* Identify the person credited for organizing the periodic table.
* State the basis for the organization of Mendeleev’s periodic table.
* Identify the families of the periodic table and describe how they are different from one another.
* Be able to read the periodic table of elements.

Vocab

* Chemistry
* Scientific method steps
* SI units
* Measurements
* Prefixes
* Atomic structure
* Electrons
* Protons
* Neutrons
* Atomic number
* Nucleus
* Mass number
* Isotopes
* Atomos
* Dalton’s atomic theory
* Periodic table
* Family
* Period
* Alkali Metals
* Alkaline Earth Metals
* Transition Metals
* Boron Family
* Carbon Family
* Nitrogen Family
* Halogen
* Noble Gases