Midterm Review – Vocabulary Terms

**Chemistry:** the science that investigates and explains the structure and properties of matter.

**Matter:** anything that takes up space and has mass.

**Mass:** the measure of the amount of matter an object contains.

**Property:** the characteristics of matter; how it behaves.

**Qualitative:** an observation made without measurement; non-numerical.

**Quantitative:** an observation made with measurement; numerical.

**Scientific Method:** A series of steps followed in answering scientific questions.

**Substance:** matter with the same fixed composition and properties.

**Mixture:** a combination of two or more substances in which the basic identity of each substance is not changed.

**Physical Property:** a characteristic of matter that is exhibited without a change of identity.

**Physical Change:** a change in matter where its identity does not change.

**Solution:** a mixture that is the same throughout, or homogeneous.

**Solute:** the substance that is being dissolved when making a solution.

**Solvent:** the substance that does the dissolving when making a solution.

**Heterogeneous:** different throughout.

**Homogeneous:** the same throughout.

**Alloy:** a solid solution containing different metals, and sometimes nonmetallic substances.

**Aqueous Solution:** a solution in which the solvent is water.

**Law of Conservation of Mass:** in a chemical change, matter is neither created nor destroyed.

**Element:** a substance that cannot be broken down into simpler substances.

**Compound:** consisting of two or more elements joined together.

**Density:** the amount of matter (mass) in a given unit volume (such as a mL or cm3).

**Polar Molecule:** a molecule that has a positive pole and a negative pole because of the arrangement of the polar bonds; also called a dipole.

**Nonpolar Molecule:** a molecule with no poles and thus, no dipole moment.

**Chemical Property:** a property that can be observed only when there is a change in the composition of a substance.

**Chemical Change:** the change of one or more substances into other substances.

**Atom:** the smallest particle of a given type of matter.

**Hypothesis:** a prediction that can be tested to explain observations.

**Variable:** the part of the experiment that is being tested.

**Control:** the part of the experiment that is being held constant.

**Theory:** an explanation based on many observations and supported by the results of many experiments.

**Scientific Law:** a fact of nature that is observed so often that it is accepted as the truth.

**Electron:** a negatively charge subatomic particle.

**Proton:** a positively changed subatomic particle.

**Neutron:** a subatomic particle with a mass equal to a proton but with no charge.

**Metal:** an element that has luster, conducts heat and electricity, and usually bends without breaking; located to the left of the staircase on the periodic table (with the exception of Hydrogen).

**Nonmetal:** an element that in general does not conduct electricity, is a poor conductor of heat, and is brittle when solid; located to the right of the staircase on the periodic table.

**Metalloid:** an element that has chemical and physical properties of both metals and nonmetals; located along the staircase on the periodic table (B, Al, Si, Ge, As, Sb, Te, Po, At)

**Cation:** a positively charged ion.

**Anion:** a negatively charges ion.

**Monatomic Ion:** an ion consisting of an atom of a single element.

**Polyatomic Ion:** an ion consisting of two or more different elements.

**Binary Ionic Compound:** an ionic compound (metal/nonmetal) that contains only two elements.

**Binary Molecular Compound:** a molecular compound (nonmetal/nonmetal) that contains only two elements.

**Chemical Formula:** a list of the types of elements and number of each element contained in a compound. For example the chemical formula for Carbon Dioxide is: CO2 .

**Chemical Symbol:** the symbol for an element on the periodic table; for example H is the chemical symbol for Hydrogen.

**Diatomic Elements:** elements that commonly occur as two atoms of the same element paired together; there are seven of these (H2, N2, O2, F2, Cl2, Br2, I2).

**Ion:** an atom or group of combined atoms that has a charge because of the loss or gain of electrons.

**Molecule:** an uncharged group of two or more atoms held together by covalent bonds.

**Formula Unit:** the simplest ratio of ions in a compound.

**Subscript:** a number or letter written to the bottom right of a chemical symbol; the 2 is considered to be a subscript in the formula O2 .

**Ternary Compound:** a compound consisting of three or more elements (usually includes a polyatomic ion).

**Valence Electrons:** an electron in the outermost energy level of an atom; can be located easily by looking at the roman numeral at the top of each “A” column on the periodic table. For example, IIA would have two valence electrons.

**Metric System:** a counting system based on the power of ten, which is used worldwide. This system uses units such as grams, liters, and meters.

**Volume:** the amount of space an object takes up.

**Length:** how long an object is, generally measured in meters (metric system).

**Meter:** the metric unit for length.

**Liter:** the metric unit for volume.

**Gram:** the metric unit for mass.