Review Topics Test 1 CHM 1033 Modules 1-3

Module 1

1. Use conversion factors to convert:
   a. English to English measurements
   b. Metric to Metric Measurements
   c. English to Metric Measurements
2. Temperature Conversions
3. Calculation of volume using formula for cube or other prism with three dimensions and for a cylinder if formula is given.
4. Calculation of volume by water displacement.
5. Conversion of fractional units
6. Conversion of cubic units.
7. Calculation of density.
8. Using density as a conversion factor when given density and mass and asked for volume or density and volume and asked for mass.
9. Specific gravity
10. Dosage problems
11. Nutrition conversions between grams of protein, carbohydrates and fats and calories.

Module 2

1. Classification of Matter into Substances and Mixtures.
2. Know the difference between elements, compounds, homogeneous mixtures and heterogeneous mixtures.
3. Know the characteristics of the states of matter.
4. Know the ways to convert between the states of matter and the names of the processes to do this.
5. Know the symbols for the elements on p. 23.
6. Know the monoatomic, diatomic and polyatomic elements.
7. Know the metals, nonmetals and metalloids.
8. Know the elements that are solids, liquids and gases at room temperature.
9. Know the charges and masses of protons, neutrons and electrons.
10. Know how to determine numbers of protons, neutrons, electrons, mass number, atomic number, symbols and names of elements given enough information.
11. Know how to determine valence electrons-electrons in the highest energy level of an element. It will be the same as the group number.
12. Know the isotope symbols.
13. Know the names of the sections and some of the groups of the periodic table.
14. Know the maximum number of electrons in each energy level.
15. Know the electron configurations for all elements up to calcium.
16. Be familiar with the octet rule.
17. Know what are the ions formed by the elements in groups IA-VIIA. (Representative elements).
18. Know that some elements form more than one charge for the ions and for these a roman numeral is used to describe the charge of the ion.
19. Know that for elements in IA, IIA and Al, Ag, Zn, and Cd no roman numeral is required. The name of the ion is just the name of the element.

Module 3

1. Know how to do the Lewis dot structures of the elements.
2. Know how to create ionic formulas when given the two elements that are combining by knowing the charges and criss crossing to determine the subscripts.
3. Know the difference between ionic (metal or NH_4^+ present) and covalent (no metal or NH_4^+ present) compounds.
4. Know the names of the polyatomic ions.
5. Know how to name ionic compounds. Never use prefixes with these:
   a. When binary the name of the metal plus the name of the nonmetal with ending –ide. The metal will have a roman numeral if not a fixed charge metal.
   b. When ternary the name of the metal plus the name of the polyatomic ion. The metal will have a roman numeral if not a fixed charge metal.
6. Know how to name binary covalent compounds. The name of the first nonmetal plus the name of the second one with ending –ide. Prefixes will be used except if the first one is only one.
7. Know how to do the Lewis dot structures of simple covalent compounds or diatomic elements.