**Study Guide- Honors Chemistry Chapter 12 and 13**

\* Know and review all vocabulary words on TB pp. 412 and 442 and in your vocabulary section.

\* Review all practice, Tables, and Figures in chapters 12 and 13. \*

\* Review reading for both chapters using TB pp. 387-412 and pp. 419-442\*

Be sure you can:

* Distinguish between homogeneous and heterogeneous mixtures - give examples of each
* Distinguish between colloids, solutions, and suspensions and know the approximate range of particle sizes for each
* Explain what the Tyndall effect is, and which type of mixture has this property
* Distinguish between an electrolyte and a nonelectrolyte and give everyday examples of each
* Explain WHY the aqueous solution of an electrolyte conducts electricity, but the solid form does not
* Distinguish between unsaturated, saturated, and supersaturated solutions
* Distinguish a polar solvent from a nonpolar solvent and give examples of each
* Explain how temperature and pressure affect the solubility of gases in liquid
* Explain the general trend of the effect of temperature on the solubility of solids in liquids
* Can write accurate chemical formulas for ionic compounds (including those with polyatomic ions)
* Can write the balanced chemical equation for an ionic compound dissolving in water, and state how many moles of ions are formed when the compound dissolves.
* Can determine whether a precipitate will form when aqueous solutions of two ionic substances are mixed (you will be given a copy of the solubility chart to use on the test), write the balanced molecular equation for the reaction, write the full ionic equation, identify the spectator ions, and write the net ionic equation.
* Can distinguish a substance that is an electrolyte from a nonelectrolyte, and distinguish strong electrolytes from weak electrolytes (be able to give examples of each).
* Know how to use the Van't Hoff factor, “i” to account for differences in solute behavior of electrolytes (ionic compounds and acids) as compared to nonelectrolytes
* Know your strong and weak acids and bases and your polyatomic ions

Calculations:

* Understand how to use the definitions of molarity, molality, and percent concentration to do the following types of calculations. Given the number of moles of solute and the volume of solution, calculate the molarity of the solution.
* Given the number of moles of solute and the mass of the solvent, calculate the molality of the solution.
* Given the molarity of a solution and the number of moles of solute it contains, calculate the volume of the solution.
* Given the molality of a solution and the mass of the solvent used to make it, calculate the mass of solute in the solution.
* Given the desired molality of a solution and the number of moles of solute to be used, calculate the mass of solvent needed to make the solution at the correct molality
* Given the molarity of a solution, calculate the volume of the solution that contains a given mass of solute.
* Given the volume and the molarity of a desired solution, calculate the mass of solute needed to prepare it
* Know how to calculate the freezing point depression or boiling point elevation for a solution of either a nonelectrolyte or an electrolyte.

\*Remember – this is just a guide to help you study for the test! \*