**Unit 5 Notes**

**Molarity**

Molarity – The number of moles of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ per liters of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Also known as a solution’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Units: M or mol/L

Solute- The substance \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a solution (usually a solid)

Solvent – The liquid in which a substance is dissolved in to make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Most of the time the liquid is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, known as the universal solvent.

Solute + Solvent = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(a homogeneous mixture)

Dilution – The process of adding more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Diluting a solution will always result in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in molarity.

Molarity Calculations: moles solute/ liter solvent = molarity or mol/L =M

Calculate the molarity of a solution made from 1.5 mol of NaCl and 0.90 L of water.

Calculate the amount of moles of CaCO3 neededin 850 mL of water to make a solution with a molarity of 2.3 M.

Calculate the volume of water needed to make a 10 M solution with 0.65 moles of Al(OH)3

Calculate the amount of grams of ZnCl2 needed to dissolve in 300 mL of water to make a solution with a molarity of 4.5 M

Dilution Calculations: M1V1 = M2V2

What is the final volume of a 2.3M solution that has been diluted from .01 L of a 10M solution?

What is the new molarity when 350 mL of 5.0 M solution is diluted to 950 mL?