Review topics CHM1025 Module 10

Module 10:

1. Balancing chemical equations. Remember to balance the polyatomic ions first (as a whole, not individual elements).Then balance other elements but leave elements by themselves for last. Only change coefficients, never subscripts. You can use fractional coefficients if you have an odd number of a diatomic element and then you multiply by 2. If OH on one side and H_2O on the other balance the H_2O as HOH.

2. Know that the coefficients in a balanced chemical equation are ratios of particles (atoms, molecules or formula units) or ratios of moles. They are never ratios of grams.

3. Use balanced chemical equations to convert from the amount of a reactant or product to the amount of another reactant or product using the mole ratio (coefficient ratio). If given grams or asked for grams you need to use the molar mass to convert to or from grams to moles.

4. If given amount of only one reactant and told that the other reactant is in excess then you just use the amount given (limiting reactant) to convert to the amount of product obtained.

5. If given amounts of two reactants and asked to calculate the amount of product obtained you must first determine the limiting reactant by converting the amount of each individual reactant separately to the amount of the **same** product. The one that gives you the lesser amount of product is the limiting reactant and the amount of product obtained with the limiting reactant is the theoretical yield (also called maximum yield or calculated yield) of the product.

6. Calculation of percent yield. %yield = (actual yield / theoretical yield) x 100

7. Remember that if they tell you that an amount of product is obtained in a reaction that is the actual yield.