**Ch 3 Sect 8-10 Name:**

*3.8 Formula Mass and the Mole Concept for Compounds* (Review how to calculate formula mass.)

*Practice 3.12 (write the balanced formula and show your work) calcium nitrate \_\_\_\_\_\_\_\_\_\_\_\_*

How is molar mass defined? Why is this more convenient to use than formula mass?

*Practice 3.13 (It is much easier to use 1g/1000mg as a conversion factor.)*

*More Practice 3.13*

*3.9 Composition of Compounds*

CFC (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_carbon) compounds were used as refrigerant gases. What household products were they

used in? *(Google)* What does it mean the gases were “chemically inert”?

Why/how were the CFCs harmful?

What change would be made in the calculation on pg 113 if you wanted to find the % of fluorine in CCl2F2 (Freon)?

*More Practice 3.14 (balanced formula for sodium oxide \_\_\_\_\_\_\_\_\_)*

*Practice 3.15 iron(III) oxide \_\_\_\_\_\_\_\_\_\_\_*

*Read pg 116 (The notice at the bottom is very important.)*

*Practice 3.16*

*CC 3.11 \_\_\_*

Read Chemistry *and Medicine* pg 118 *Answer the question (Calculating ppm is similar to % but multiply by 1x106)*

*3.10 Determining a Chemical Formula from Experimental Data*

To determine empirical (or molecular) formulas of unknown cmpds we need to analyze the *relative* masses of each element present in the compound.

*Follow example 3.17 and 3.18. (instead of writing the “psedoformula” just divide by the smallest in STEP 2)*

*Practice 3.18*

*Follow the discussion at the top of 120. (The molar mass of an unknown cmpd can be estimated by experiment.)*

*More Practice 3.19*

What type of compounds work well for combustion analysis? Why?

How is the amount of carbon and hydrogen determined from the products of combustion?

*Practice 3.21*

*Exercises**(pgs 132-136)**59c, 62c, 66b, 69, 73, 77, 83d, 87b, 89a, 97\*, 99\*,113, 116, 122, 124, 131*

**Ch 4 Chemical Reactions and Chemical Quantities Name:**

*4.1 Climate Change and the Combustion of Fossil Fuels*

What greenhouse gas is increased due to combustion? How is the greenhouse effect related to global warming?

*4.2 Writing and Balancing Chemical Equations*

How do you recognize a combustion reaction?

We represent a chemical reaction with a chemical \_\_\_\_\_\_\_\_\_\_\_\_ with r\_\_\_\_\_\_\_\_\_\_\_\_\_s and p\_\_\_\_\_\_\_\_\_\_\_\_\_\_s.

To balance the reaction for the combustion of methane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_s are placed in \_\_\_\_\_\_\_\_ of formulas.

Why can we NOT change subscripts in the formulas?

*Follow Example 4.1 and 4.2.* In general, it is best to balance elements other than hydrogen and oxygen first and then balance H and finally O (especially during combustion reactions).

*Practice 4.1*

*Practice 4.2*

*Practice 4.3*

*4.3 Reaction Stoichiometry: How Much Carbon Dioxide?*

What is the formula for octane? How is it used?

Look up the derivation of the word stoichiometry. What do the 2 parts of the word mean?

How is this concept similar to a recipe? How many pizzas could be made with 20oz of pizza sauce?

The most important part of stoichiometry is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ chemical equation which gives mol/mol \_\_\_\_\_\_s.

Read how to use a conceptual plan on pgs 146-7 and Example 4.4 on pg 147.  *CC 4.3 \_\_\_\_*

*Practice 4.4*

*Practice 4.5 CC 4.4 \_\_\_\_*

*4.4 Limiting Reactant, Theoretical Yield, and Percent Yield*

What turned out to be the limiting reactant in the pizza analogy? Why? What were the excess reactants?

What is theoretical yield?

Since one pizza burned what was the actual yield and percent yield?

*CC 4.6* \_\_\_\_\_ Explain how you made your choice.

*Practice 4.6*

*Practice 4.7*

*4.5 Three Examples of Chemical Reactions: Combustion, Alkali Metals, and Halogens*

The “classic” combustion reaction is for the combustion of *hydrocarbon* compounds such as \_\_\_\_\_\_\_\_\_\_(ethanol).

The products are always \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.

The other 2 reactions at the top of page 156 could be classified as *synthesis* reaction. Explain why.

Alkali metals vigorously react with \_\_\_\_\_\_\_\_\_\_\_s (such as halogens) to produce \_\_\_\_\_\_\_\_\_\_\_\_*(ionic or covalent?)* compounds which are known as “salts”. Write the equation for the reaction shown in Figure 4.4.

Hydrogen \_\_\_\_\_\_\_\_\_\_\_s form \_\_\_\_\_\_\_\_s when combined with \_\_\_\_\_\_\_\_. EX: HCl(g) becomes HCl(aq).

Notice halogens can also react with each other to form \_\_\_\_\_\_\_halogen compounds. (again type of *synthesis reaction*)

*Exercises (pgs160-162) 25, 33d, 31, 35b, 39, 45a, 47, 50*