Introduction to Organic Chemistry

Purpose: 1) to examine the underlying chemical structure of foods, 2) to burn stuff.

Procedure:

- a. From the front of the room get a paper label and two crucibles (if there is a clay triangle take that too, otherwise you will be using the clay triangle from your lab station).
- b. Set up your retort stand with a ring clamp and a clay triangle. Position the fume hood to vent the smoke from the crucible (do not place it so close that it will be strongly heated by the Bunsen burner).
- c. Light the Bunsen burner. Heat one crucible with a moderate flame. Place the other sample at the base of your retort stand (for comparison). When the reaction stops (no more smoke) turn off the Bunsen burner.
- d. Circulate to the other lab stations to observe the effect of heating on other food items.

<u>Questions:</u>

- 1. What colour did most food substances change?
- 2. Look at the elements at the front of the room. Which element most resembles the product from burning? ______. This element was present in the molecules of the foods before burning.
- e. Clean up: Put away all equipment. Return the crucibles and paper labels to the front of the room.

Questions: Read pages 506 – 507, 512 – 513. Answer all questions in the spaces provided on this sheet.

- 4. In one sentence summarize the important contribution that Wöhler made to the field of organic chemistry.
- 5. Approximately how many organic compounds have been identified so far?
- 6. Organic chemistry is the study of compounds that contain carbon with the exception of _____, ____, and ionic compounds of the carbon containing polyatomic ions ______, ____, ____, ____, ____, ____, ____, ____, and _____.
- 8. Define "hydrocarbons".
- Because C-C bonds and C-H bonds have a low △EN, hydrocarbon molecules are ______. This causes them to have a low ______ in water. The only forces of attraction between hydrocarbon molecules are ______.
- 10. ______ are formed from ancient plant and animal matter exposed to heat and pressure over time. The carbon in all organic molecules originates in plants. Only plants (and a few kinds of bacteria) can capture CO₂ from the air and incorporate it into complex organic molecules.

11. What does "refining" mean? _____

12 is obtained by drilling.	It consists of organic molecules with 1 to 40 carbon atoms.
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13. Natural gas consists of organic molecules with ______ carbon atoms.

16. Which part of a fractionating tower is the coolest? _____ The warmest? _____

17. Which part of a fractionating tower holds the smallest molecules?

18. Generally, what use do most of the petroleum fractions (in fig.1) serve?

