ALKANES AND ORGANIC STRUCTURES 1 WORKSHEET

*Organic 1a and b. Introduction and Naming*

1. Which of the following is not an organic compound?

(A) methane (B) ethanol

(C) chloroform (CHCl3) (D) carbonate

2. What is the name of CH3CH(CH3)C(CH3)2CH2CH2CH3

(A) nonane

(B) 2-methyloctane

(C) 4,4-dimethylheptane

(D) 2, 3, 3-trimethylhexane

2i. Draw the condensed and sketelal structures of this compound

3. What is the name of the compound:

(A) 6-ethyl-2,6,7-trimethyl-5-propylnonane

(B) 4-ethyl-3,4,8-trimethyl-5-propylnonane

(C) 6-ethyl-5-propyl-2,6,7-trimethylnonane

(D) 2,6,7-trimethyl- 6-ethyl-5-propylnonane

3i. Write the shortened and condensed structural formulas for this compound

*Organic 1c. Structural Isomers*

4. Which of the following is not an isomer of octane?

(A) 4-methylheptane

(B) 2-ethylhexane

(C) 2,2,4-trimethylpentane

(D) 2,2,3,3-tetramethylbutane

5. And while we’re on octane…. There are 18 structural isomers of C8H18. How many can you get (and name them!)

*Organic 1d and 1e Properties of Alkanes*

6. When brominating propane, there are 2 possible monobromo products

i. Draw them

A B

ii. The generally accepted mechanism for this reaction involves two propagation steps. Write these steps for the formation of each of the two products:

**For formation of Product A:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For formation of Product B:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. 2,3-dimethylbutane is observed among the products of this reaction, Explain.