HOMEWORK ASSIGNMENT #3 ORGANIC CHEMISTRY I (26 pts)

Non-mathematical MO theory; drawing and naming alkanes

**(due Wednesday 17 September 2014)**

**Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

3.1 Despite its’ incomprehensible mathematical complexity, the general MO theory developed by

Pople now dominates modern chemical thinking. What is the main advantage of the approach?

(1 pt)

3.2 Draw the abbreviated bondline forms for the alkanes drawn, written or named below

a) b) CH3CH(CH3)(CH2)4CH3



c) 2,3,3-trimethylhexane d)



3.3. Draw out all the possible structural isomers of C5H12 using abbreviated bondline forms and name

them according to IUPAC rules

(6 pts)

3.4. Identify the functional group family drawn or supply an example of the functional group requested:





\_\_\_\_\_\_\_\_\_\_\_\_\_\_ alkene \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



carboxylic acid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amine

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**3.5 Name (using IUPAC rules) or draw us: (1 pt each. Spelling counts) 9 pts total**





2,2-dimethyloctane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_





Cyclobutylcyclohexane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_





1-chloro-2-ethyl-3-(1-methylethyl)cyclohexane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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