HOMEWORK ASSIGNMENT #4 ORGANIC CHEMISTRY I (25 pts)

naming alkanes and some rotational conformation language

**(due Wednesday 21 September 2011)**

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

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







2,2-dimethyloctane *\_4-(1-methylethyl)-2,5dimethylheptane*\_ *3-ethyl-2-methylhexane*







*3-chloro-4-(1-methylethyl)-3,6-dimethyl*

Cyclobutylcyclohexane \_\_\_\_*3-ethyl-2,5-dimethylhexane*\_\_\_\_ \_*octane*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_







*1-chloro-2-ethyl-3-(1-methylethyl)cyclohexane* *\_2-bromo-2,8-dimethyl-3,6-* *4-(methylethyl)-5-(1,1-dimethyl* \_\_\_\_ *dipropylnonane* *ethyl)-5-fluoro-3-methylunidecane*

**4.2 Name the compounds below using both IUPAC and common naming systems (12 pts total)**



Common \_*n-butane\_\_\_\_\_\_\_\_\_\_ sec-fluorohexane\_\_\_\_\_\_\_ isobutyl chloride\_\_\_\_*

IUPAC *\_\_\_butane\_\_\_\_\_\_\_\_\_\_\_ 2-fluorohexane\_\_\_\_\_\_\_\_\_\_ 1-chloro-2-methylpropane*

Common \_*neopentane\_\_\_\_\_ t-butyl bromide\_\_\_\_\_\_\_\_ \_isopropylcyclohexane\_\_*

IUPAC \_*2,2-dimethylpropane\_ \_2-bromo-2-methylpropane\_\_\_\_\_\_ \_methylethyl cyclohexane\_*

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**4.3 Rotational Conformation language and imagery (4 pts total)**

**Circle all that apply. More than one may be circled**

**A staggered arrangement in butane is :** only anti eclipsed ***anti or gauche*** only gauche

**The staggered arrangement is ethane is : *lowest in energy*** highest in energy ***more stable*** same as eclipsed

**Referring to the diagram below: :** A is gauche A is anti ***A is staggered*** A is eclipsed

butane butane ***ethane***  ethane



A

**The source of repulsive interaction of H atoms *Van Der Waal*** differences in dipole formal

**On different C of ethane is(are) created by: *forces*** C-H bond strength interaction charge