HOMEWORK ASSIGNMENT #4 ORGANIC CHEMISTRY I (30 pts)

naming alkanes and some rotational/ring conformation language

**(due Monday 23 September 2014)**

**Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 pt**

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



Common **\_\_n-butane\_\_\_\_\_\_\_ \_\_sec-pentyl fluoride**\_\_\_\_\_\_\_ **\_\_\_\_isobutyl chloride**\_\_\_\_\_\_

(or sec-fluoropentane)

IUPAC \_\_\_**butane\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_ 2-fluoropentane\_\_\_\_\_\_\_\_\_ \_\_\_1-chloro-2-methylpropane\_**

Common \_\_\_\_\_\_\_\_**neopentane tert-buty bromide\_\_\_\_\_\_ isopropyl cyclohexane\_\_\_\_\_**

**IUPAC**  IUPAC **2,2-dimethylpropane \_2-bromo-2-methylpropane\_ (1-methylethyl)cyclohexane**

**4.2. Draw/sketch the least stable and most stable rotational conformers for 2,2,5,5-tetramethyl hexane below: (2 pts)**

**Least stable**  **Most stable**





4.3 **which is more stable ? (circle your choice. 4 points)**

**equatorial methyls** or axial methyls

**methyl cyclohexane**  or t-butylcyclohexane

cis (1,2) ax, eq cyclohexane or **trans (1,2) eq,eq cyclohexane**

cis (1,2) cyclohexane or **cis (1,4) cyclohexane**

4.4a What is the correct, complete name for the compound below ? \_\_\_\_\_\_ Trans-(ax,eq)-1,3-dibromocyclopentane \_\_\_\_\_\_

Br

**1** Br

4.4b If a third Br must be placed axially at locant position 2, will it be cis or trans to the Br at locant position 3 ?

(circle choice)

**Cis** Trans