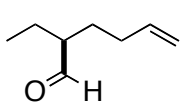
Chem 331
Exam #1
Friday, September 26, 2007

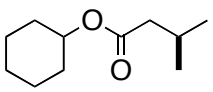
Name _____

Course #:

This is an open-book, open notes exam. Please show your work in detail.

1. (10 points) Give the proper IUPAC name for each of the following:

a. 

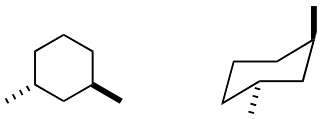
b. 

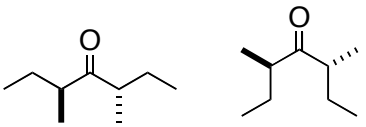
2. (10 points) Draw each of the following structures.

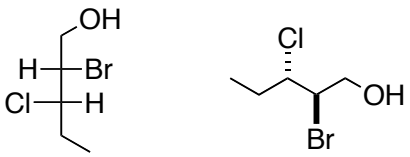
a. (3S, 5S)-1-bromo-5-chloro-3-octanol

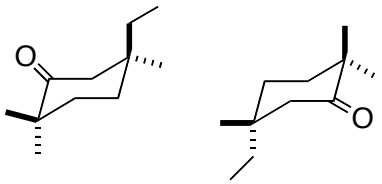
b. (2Z)-3-chloromethyl-4-methyl-2-pentenyl propanoate

3. (20 points) For each pair of structures, indicate whether they are the same, enantiomers or diastereomers.

a. 

b. 

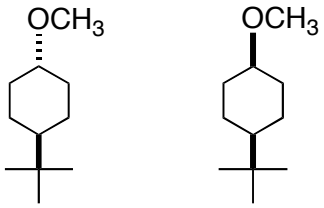
c. 

d. 

Course #:

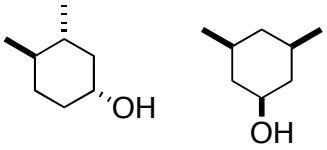
4. (20 points) For each pair of cyclohexanes, indicate which is the more stable. For each, explain your reasoning in detail.

a.



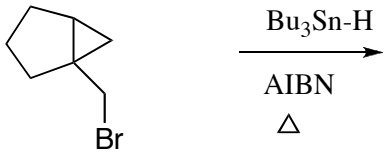
A B

b.



C D

5. (20 points) Deduce the structure of **F**, and draw a detailed arrow-pushing mechanism for the transformation of **E** to **F**.

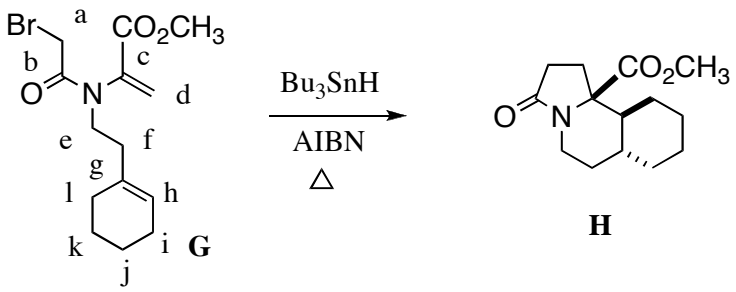


E **F** C_7H_{12}

^{13}C NMR:
26.4, t
28.4, t (2)
35.4, t (2)
106.4, t
150.1, s

course #:

6. (20 points) Draw a detailed arrow-pushing mechanism for the transformation of **G** to **H**.



bb | bf