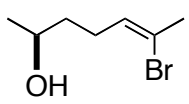
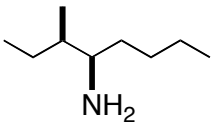
Chem 331
Exam #1
Friday, September 21, 2007

Name _____

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. 

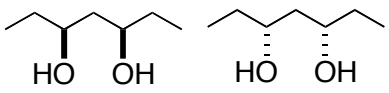
b. 

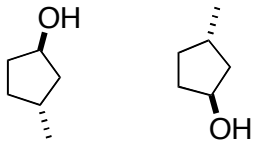
2. (10 points) Draw each of the following structures.

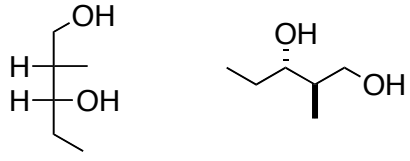
a. (2S, 7R)-7-amino-2-octanol

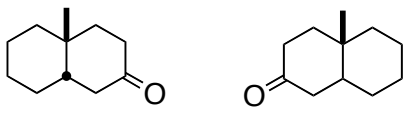
b. (2S, 4S)-2,4-dimethylcyclohexanone

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

a. 

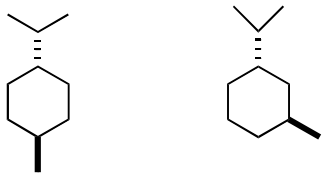
b. 

c. 

d. 

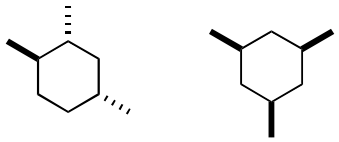
4. (20 points) For each pair of cyclohexanes, indicate which is the more stable. For each, explain your reasoning in detail.

a.



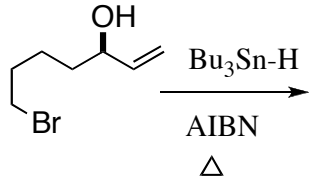
A B

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**.

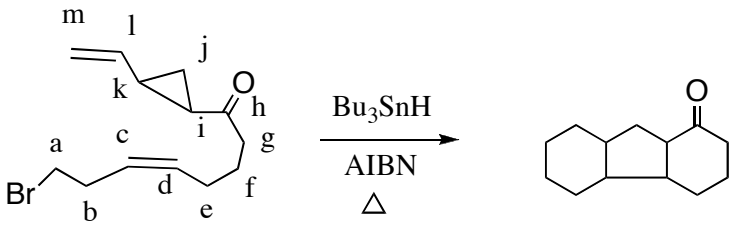


E

F $C_7H_{14}O$

^{13}C NMR:
22.7, t (2)
28.1, t (2)
35.6, t (2)
72.7, d

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



G **H**