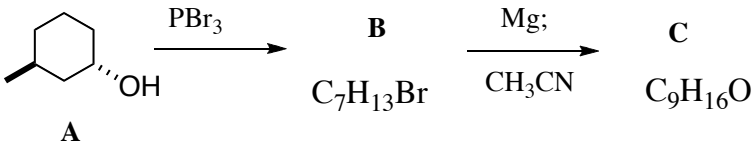
Chem 331

Name _____

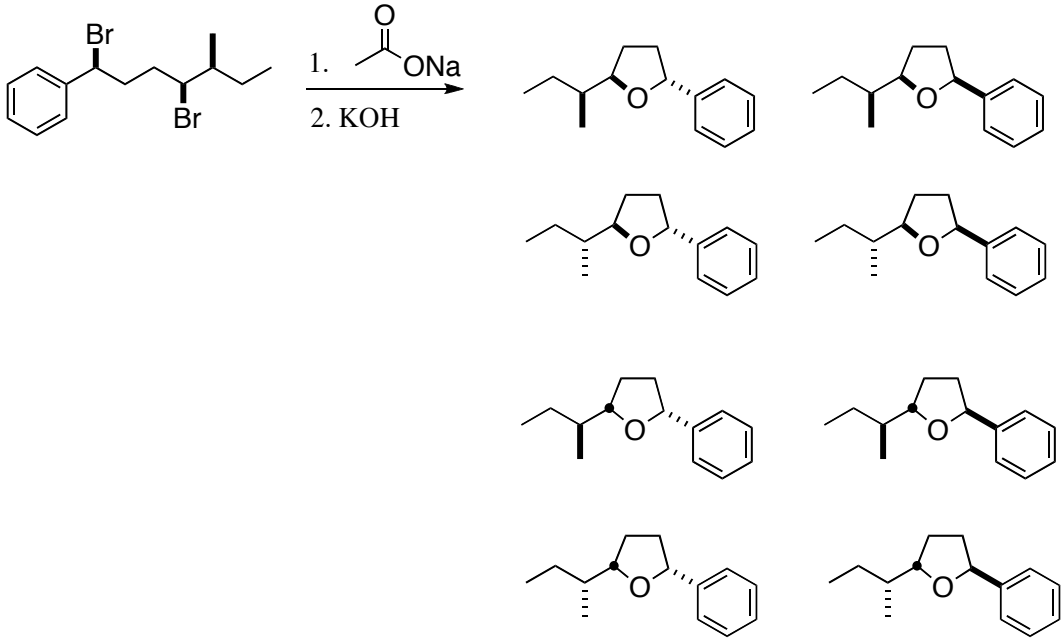
Exam #2
Friday, October 19, 2007

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

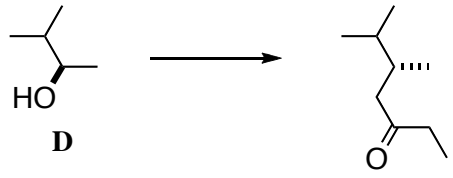
1. (20 points) Draw the structures of **B** and **C**, and give IUPAC names for **A**, **B**, and **C**. You do not have to show mechanisms, but you do need to show stereochemistry clearly.



2. (20 points) Indicate the expected major product. Explain your reasoning in detail.

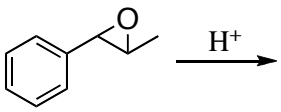


3. (20 points) Outline the synthesis steps to convert **D** into **E**. In addition to **D**, you may use any piece that contributes three or fewer carbons to the final product.



D

4. (20 points) Deduce the stucture of **F**, and draw an arrow-pushing mechanism for the transformation.

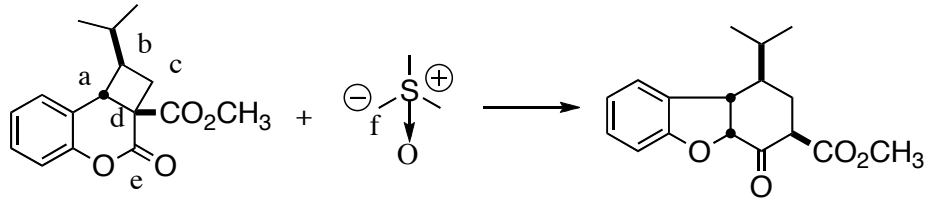


F

$C_9H_{10}O$

^{13}C NMR	**^{1}H NMR**
14.6, q	1.42, d, J = 7.3 Hz, 3H
53.0, d	3.63, dq, J = 4.2, 7.3 Hz, 1H
127.5, d	7.22, dd, J = 8.1, 2.4 Hz, 2H
128.3, d (2)	7.31, dd, J = 8.1, 8.2 Hz, 2H
129.0, d (2)	7.38, td, J = 8.2, 2.4 Hz, 1 H
137.8, s	9.65, d, J = 4.2 Hz, 1H
200.8, d	

5. (20 points) Draw a detailed arrow-pushing mechanism for the following transformation. 5/20 points for correctly showing the mapping of the starting material onto the product.



bb | bf