

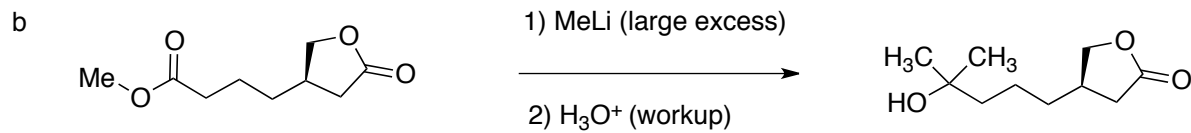
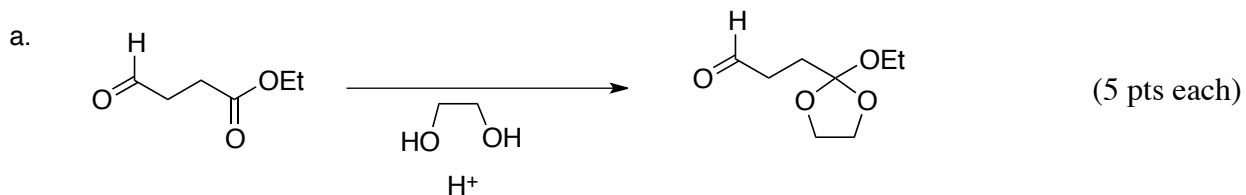
Chem 331
Exam 3
2011
Prof. Fox
50 minutes

The exam is open book,
Open notes. Models are permitted
Show your work in detail

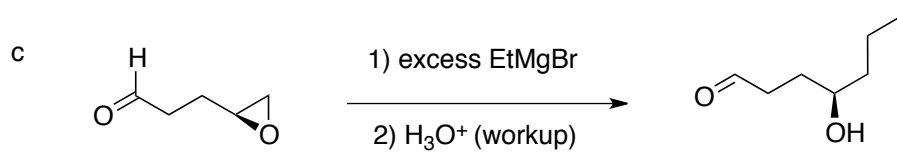
WRITE YOUR NAME ON EVERY PAGE

NAME _____

1. The reactions shown below would not proceed as shown. Explain why (be concise), and indicate which product would be formed instead.

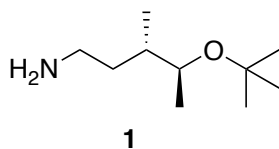


1. The reactions shown below would not proceed as shown. Explain why (be concise), and indicate which product would be formed instead.

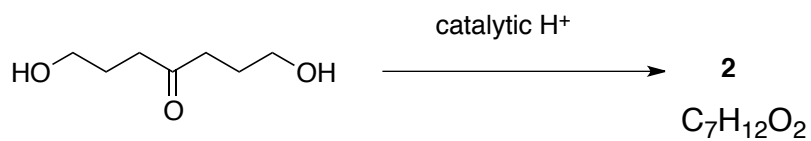


2. Propose a synthesis for **1** starting with any materials that contain 4 carbons or less. You may also use *reagents* that contain more than 4 carbons (e.g. Ph₃P, LDA, MCPBA, DIBAL, DCC, pyridine, TsCl, Et₃N).

(25 points)



3. Propose the structure of **2**. Provide a mechanism for its formation. (20 pts)



^{13}C NMR

110.2, s
69.6, t, 2 carbons
29.8, t, 2 carbons
20.8, t, 2 carbons

^1H NMR

3.90–3.80 (m, 4H)
2.06–1.81 (m, 4H)
1.90–1.80 (m, 4H)

4. Propose a detailed arrow pushing mechanism (20 pts)

