

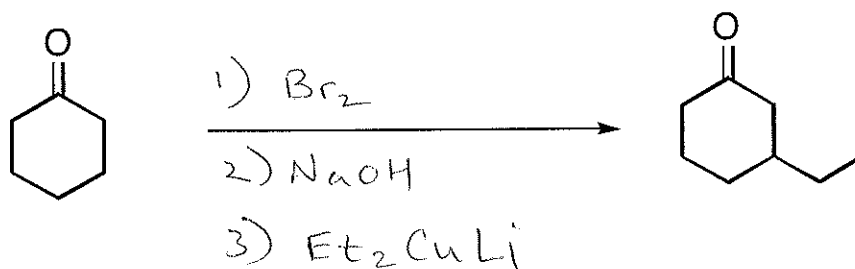
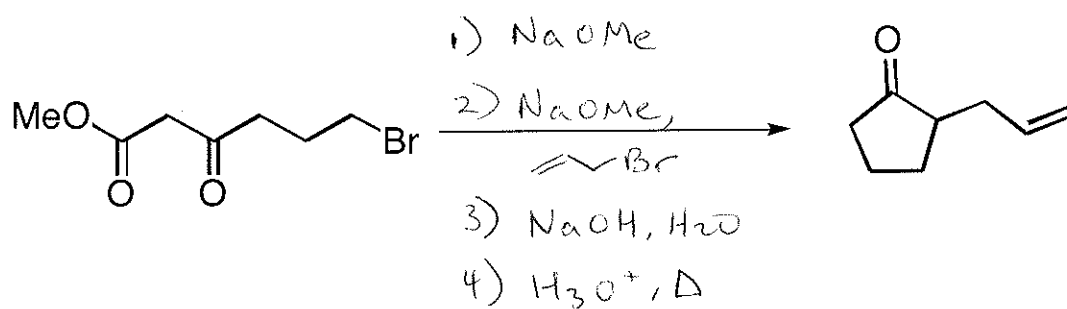
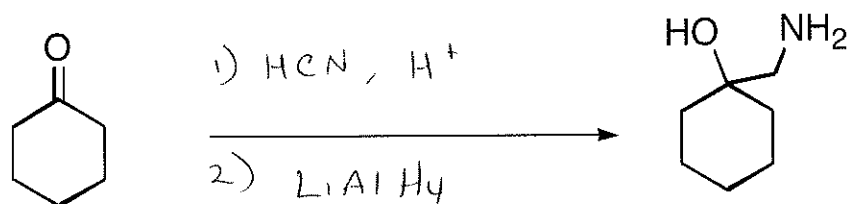
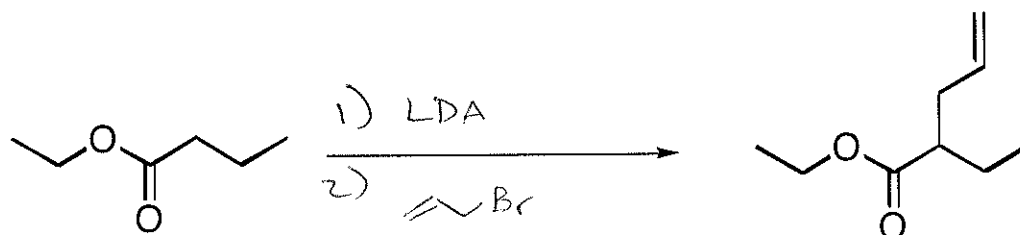
Chem 332
Exam 1
March 5, 2007
Prof. Fox
50 minutes
100 points

Show your work in detail

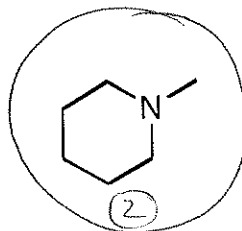
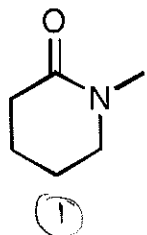
WRITE YOUR NAME ON EVERY PAGE

NAME _____

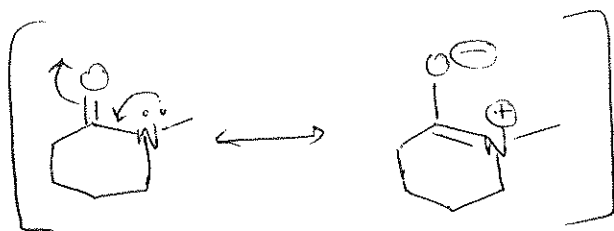
1. Provide reagents for the following transformations (5 pts each)



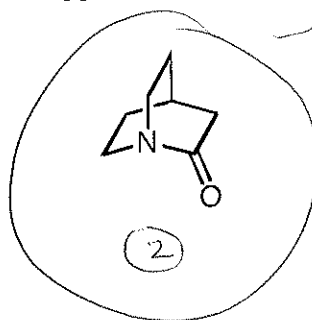
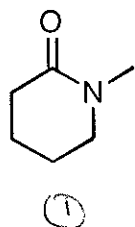
2a Circle the product below that is the stronger amine base. Provide a detailed but brief explanation to support your answer. Use chemical structures to support your answer. (15 points)



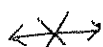
① is less basic because the lone pair is conjugated with the carbonyl.



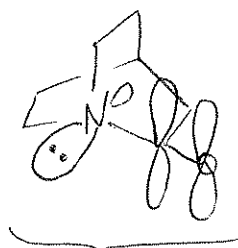
2a Circle the product below that is the stronger amine base. Provide a detailed but brief explanation to support your answer. Use chemical structures to support your answer. (15 points)



② is more basic because the lone pair is NOT STABILIZED by conjugation DUE TO POOR overlap with the carbonyl π -bond.

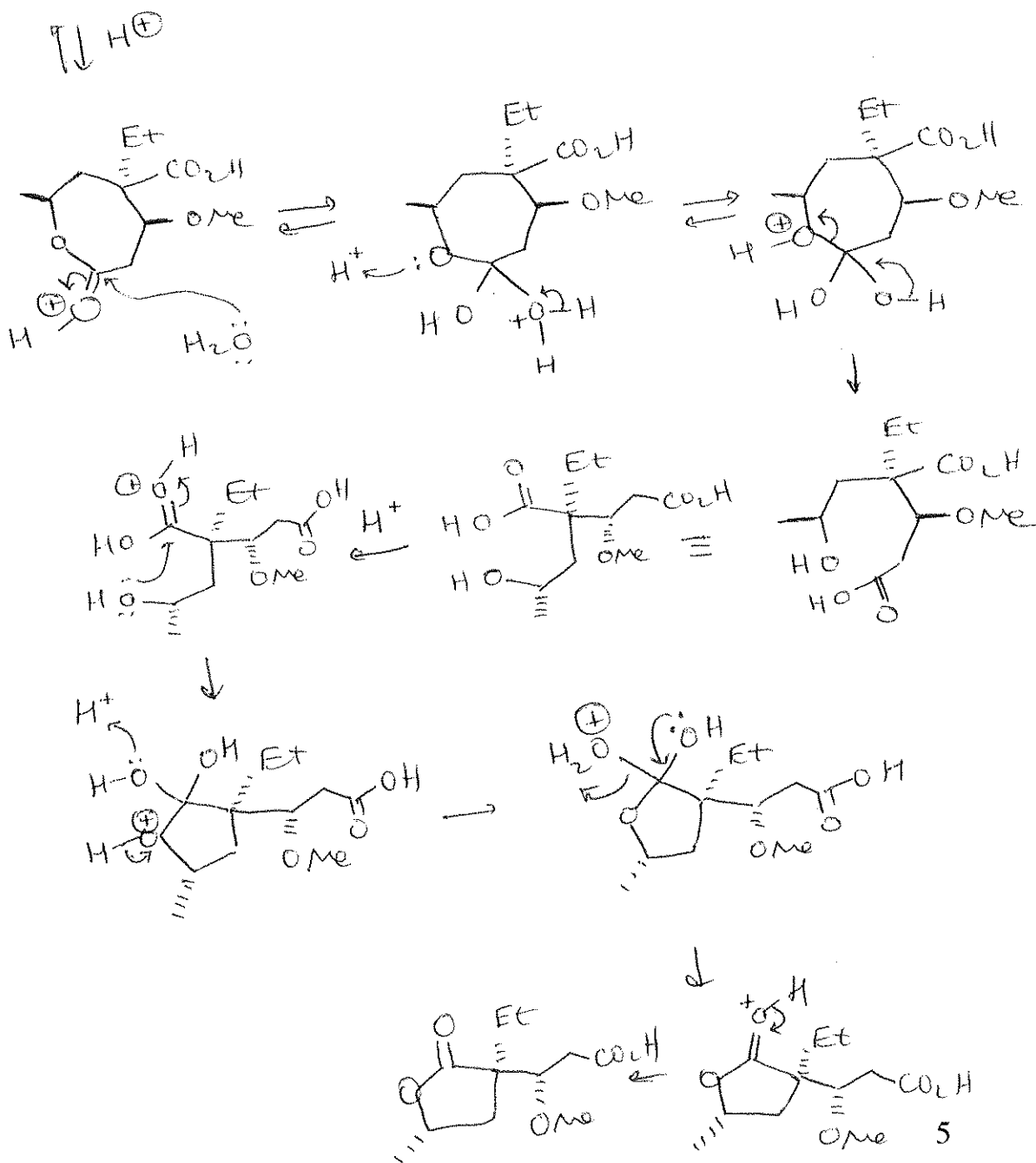
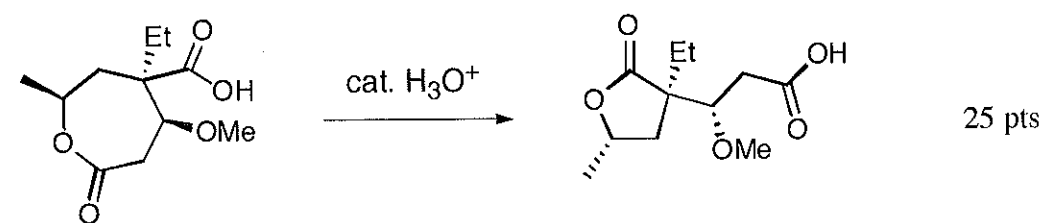


NOT A VALID
RESONANCE
STRUCTURE.

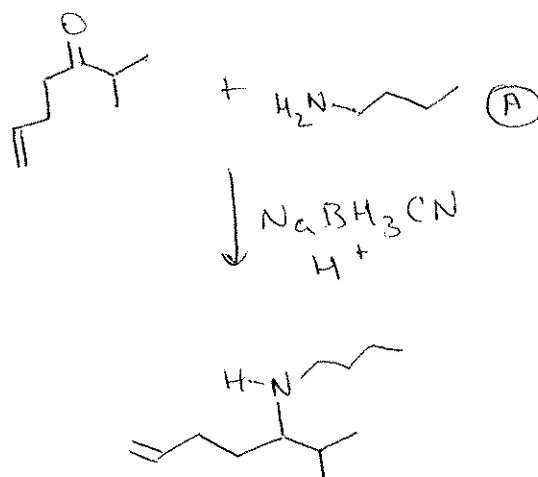
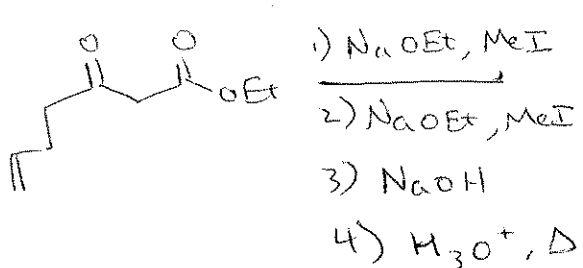
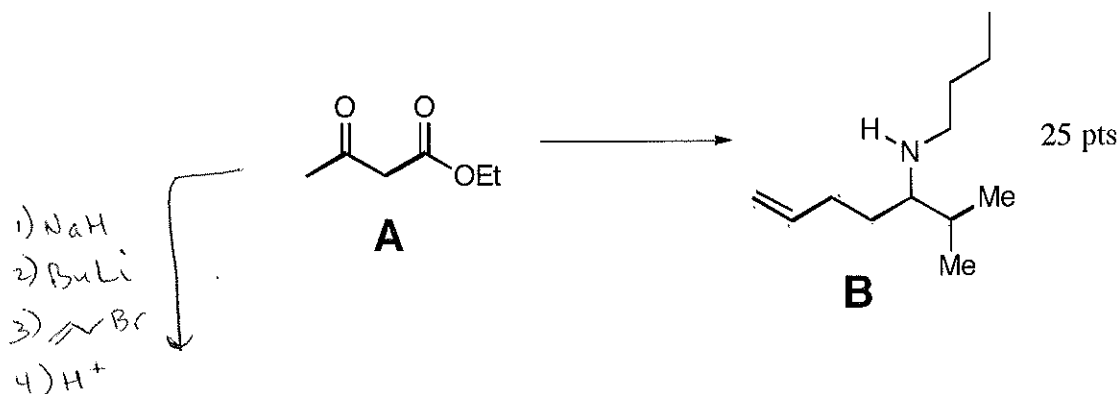


POOR ORBITAL OVERLAP.

- 3 Provide a detailed arrow pushing mechanism. Show the mechanism of all steps.



- 4 Provide a synthesis of **B** using **A** and any other materials that contain **3 carbons or less**.
Reagents that do not become incorporated into the product (e.g. $n\text{BuLi}$, PPh_3) may be employed



SynTH of (A)

