

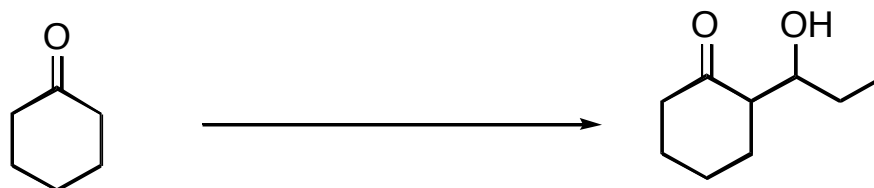
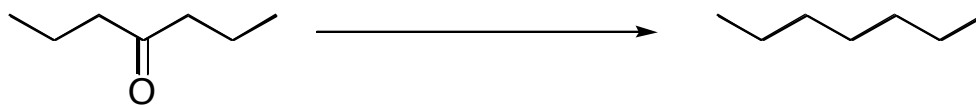
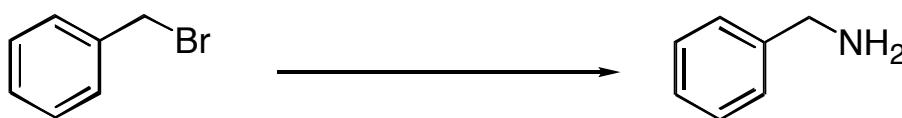
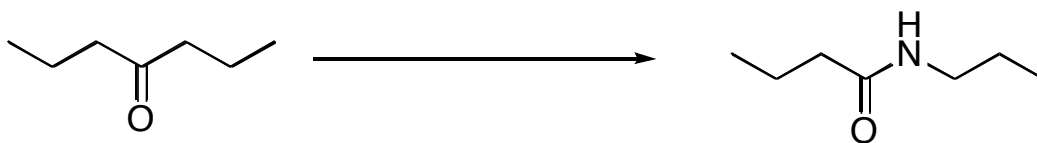
Chem 332
Exam 1
March 3, 2006
Prof. Fox
50 minutes
100 points

Show your work in detail

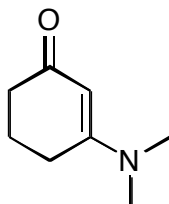
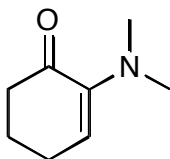
WRITE YOUR NAME ON EVERY PAGE

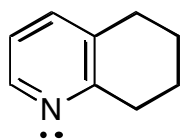
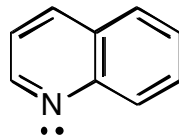
NAME _____

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



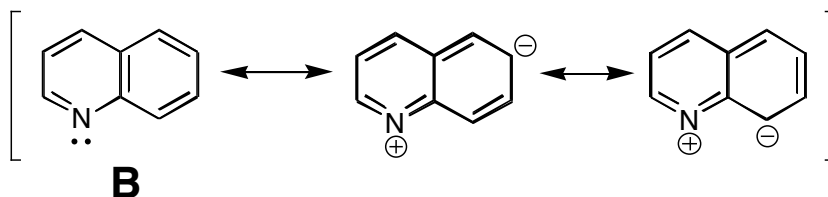
2a Circle the product below that is the stronger amine base. Provide a detailed but brief explanation to support your answer. Use chemical structures to support your answer. (15 points)



2b Consider compounds **A** and **B** below**A****B**

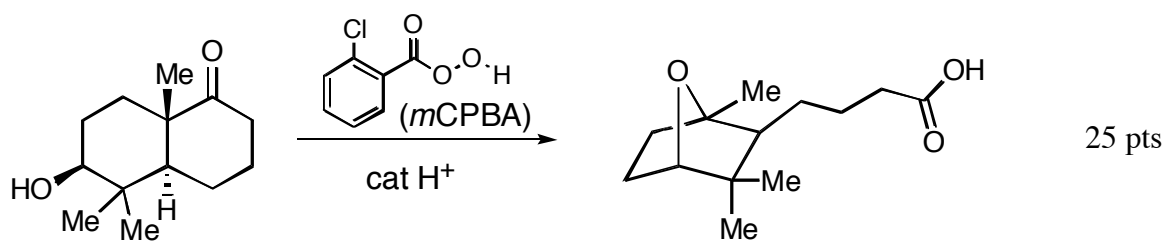
(15 points)

An overly ambitious student might predict compound **B** to be less basic than **A**, because the lone pair of **B** is conjugated with the neighboring aromatic ring as shown below.

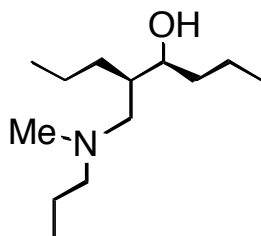
**B**

However, the analysis above is **incorrect**: the pK_a's of the conjugate acids of **A** and **B** are nearly identical. Explain the flaw in the rationale above.

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



- 4 Provide a synthesis of **A** using any materials that contain **3 carbons or less**. Reagents that do not become incorporated into the product (e.g. nBuLi, PPh₃) may be employed



25 pts

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scratch paper

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