

Chem 332  
Exam 2  
March 5, 2003  
Prof. Fox  
50 minutes  
250 points

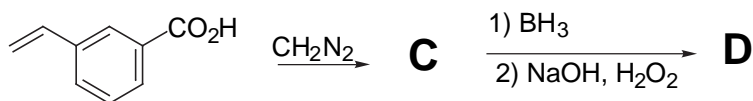
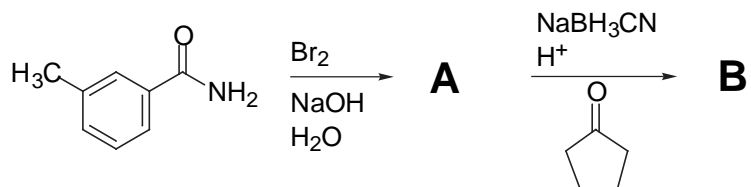
The exam is open book,  
Open notes. Models are permitted  
Show your work in detail

WRITE YOUR NAME ON EVERY PAGE

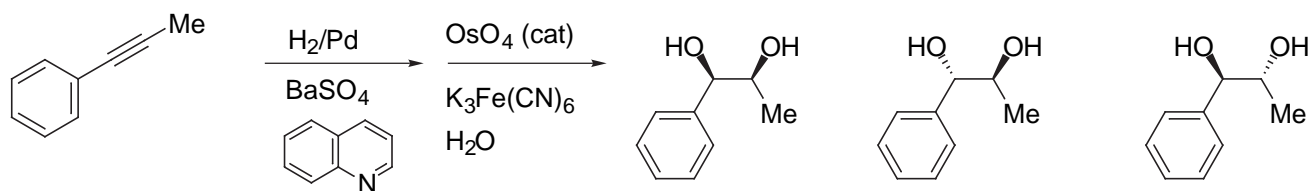
NAME \_\_\_\_\_

1. Provide Structures of **A**, **B**, **C** and **D**. Mechanisms are not needed. 10 points for each correct structure

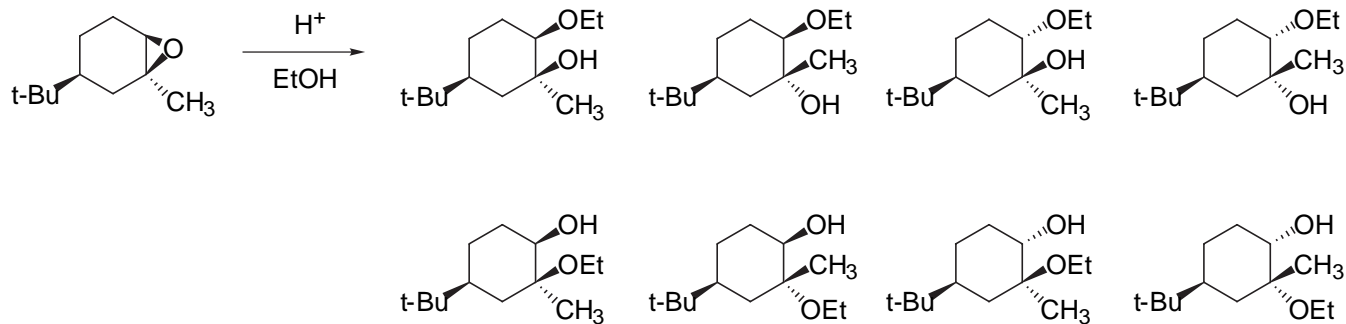
(total 40 pts)



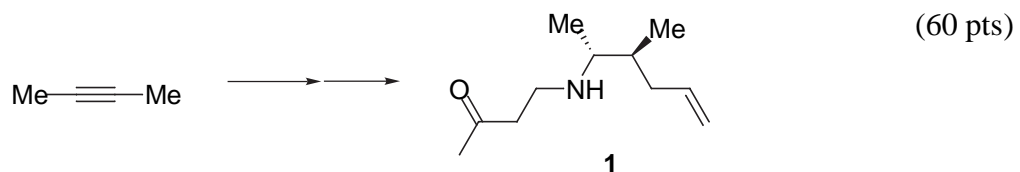
2. Circle the correct product. Provide a clear and concise explanation. (30 pts)



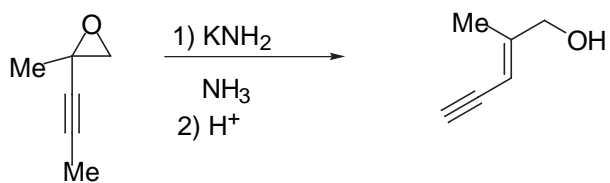
3. Circle the correct product. Provide a clear and concise explanation. (30 pts)



4. Provide a detailed multistep synthesis of **1** starting from 2-butyne and any materials that contain 3 carbons or less. Reagents that do not get incorporated into your product (such as BuLi, Ph<sub>3</sub>P) may be used as well.



5. Provide a detailed arrow pushing mechanism (45 pts)



6. Provide a detailed arrow pushing mechanism for the formation of **4**. Hint: consider all of the resonance forms for **3**.

