Organic Chemistry c3444y

3rd Hour Exam

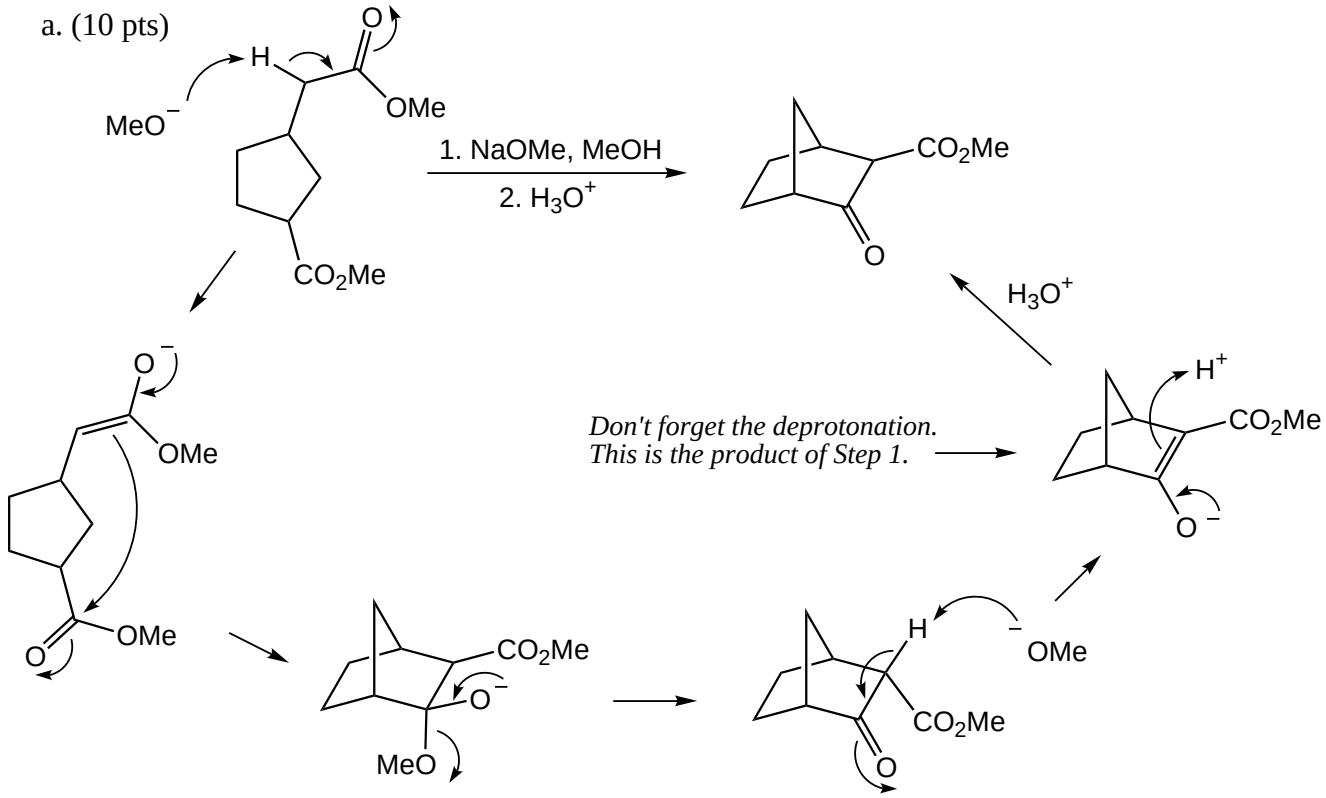
Monday, April 8, 2002
Prof. Leighton

Answer Key

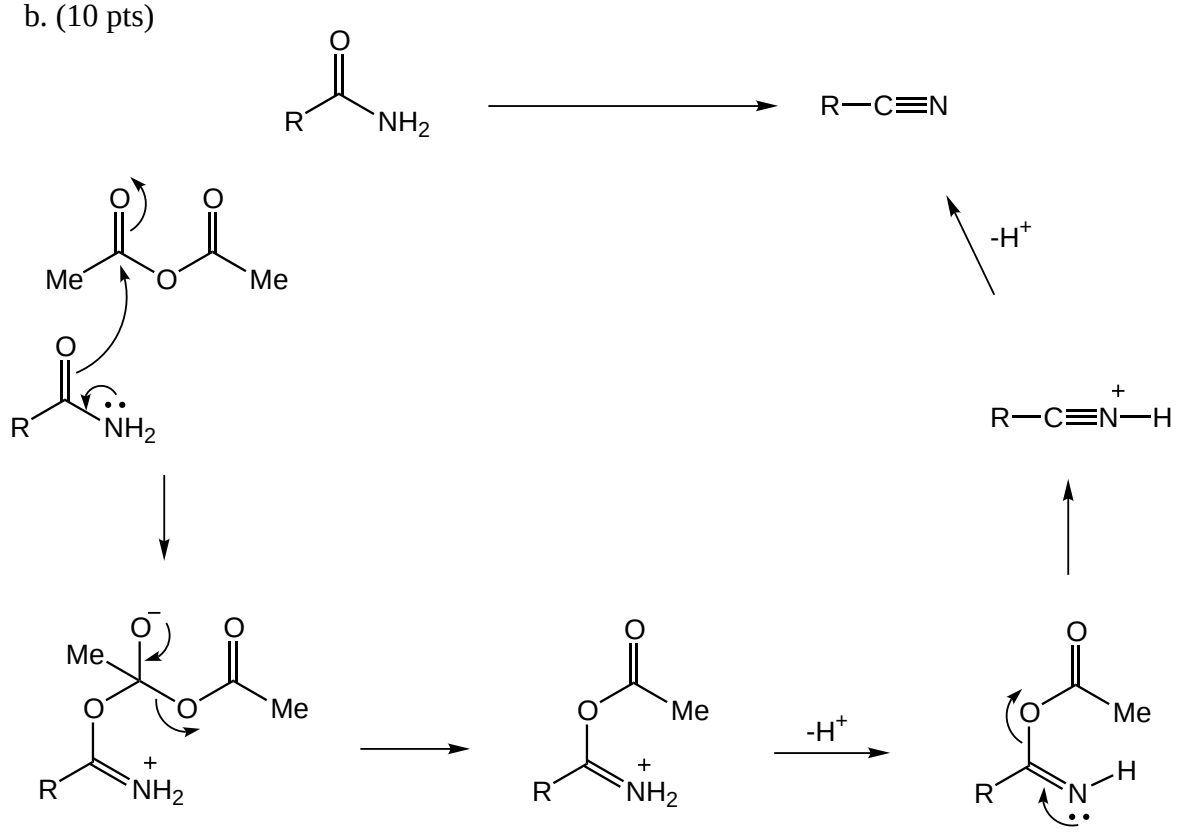
Name: _____

1. Provide detailed mechanisms for the following transformations:

a. (10 pts)



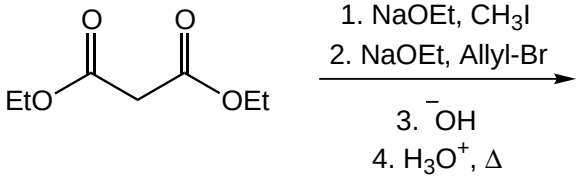
b. (10 pts)

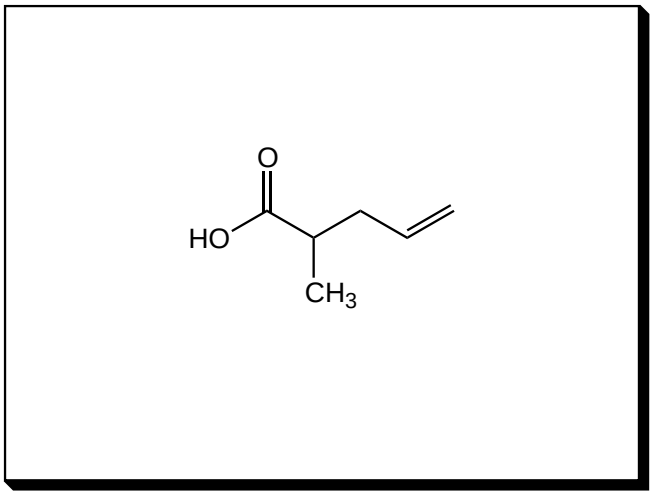


Name: _____

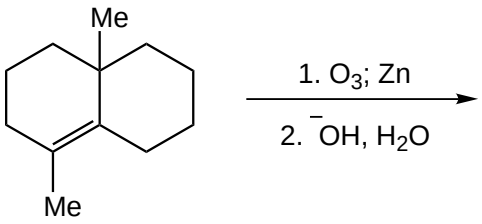
2. Predict the major product of the following reactions:

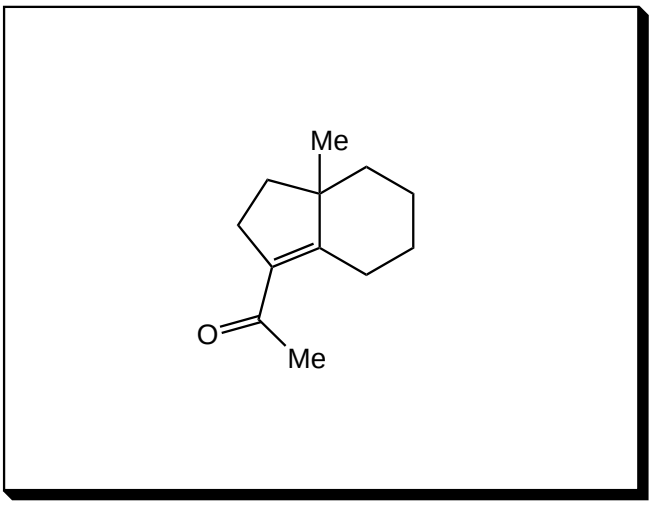
a. (9 pts)



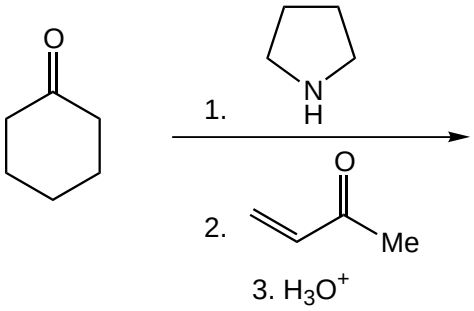


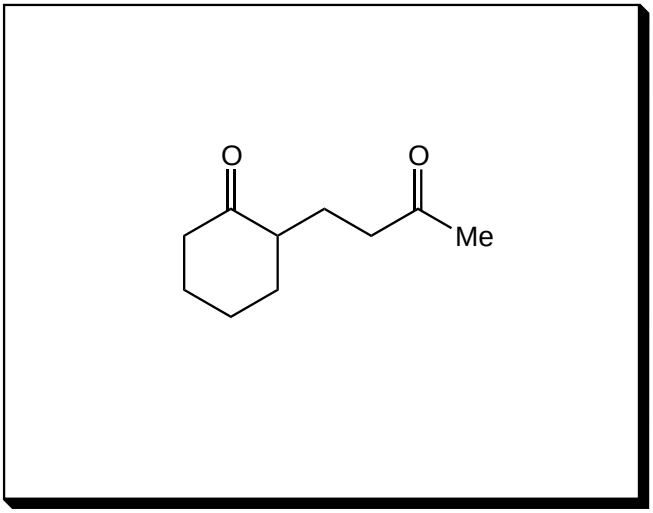
b. (8 pts)





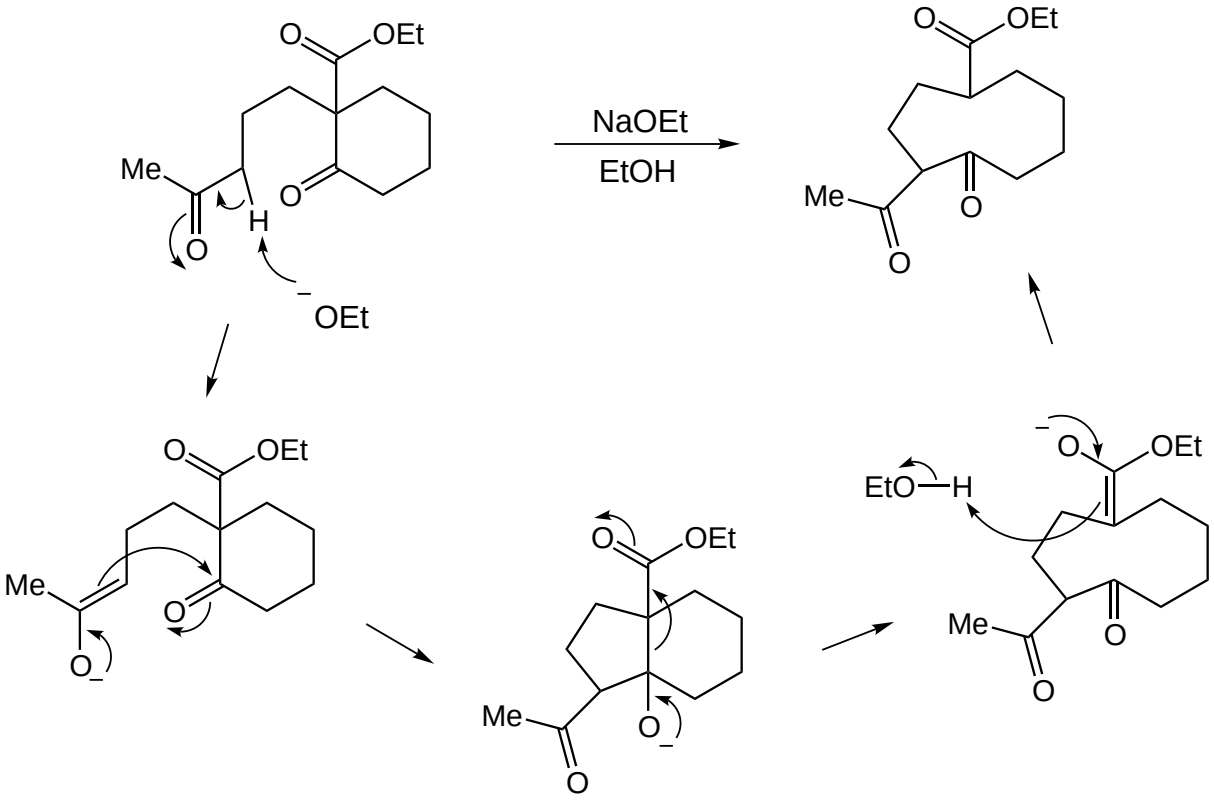
c. (8 pts)



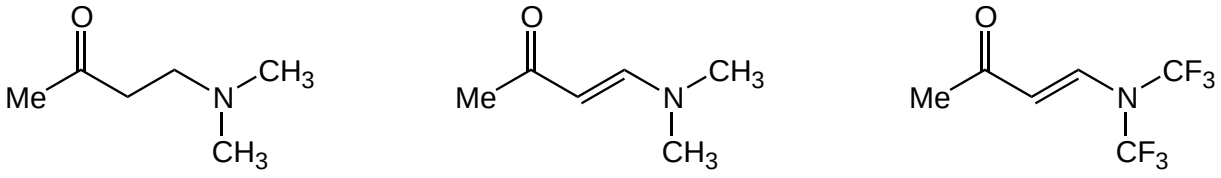


Name: _____

3. a. (10 pts) Provide a mechanism for the following reaction. (*As always, do not be intimidated by an unfamiliar reaction. Just focus on what bonds are being made, and what bonds are being broken.*)



b. (10 pts) Rank the three compounds shown below from lowest frequency to highest frequency for the C=O stretch in the IR spectra. PLEASE CLEARLY WRITE ONE LETTER IN EACH BOX.



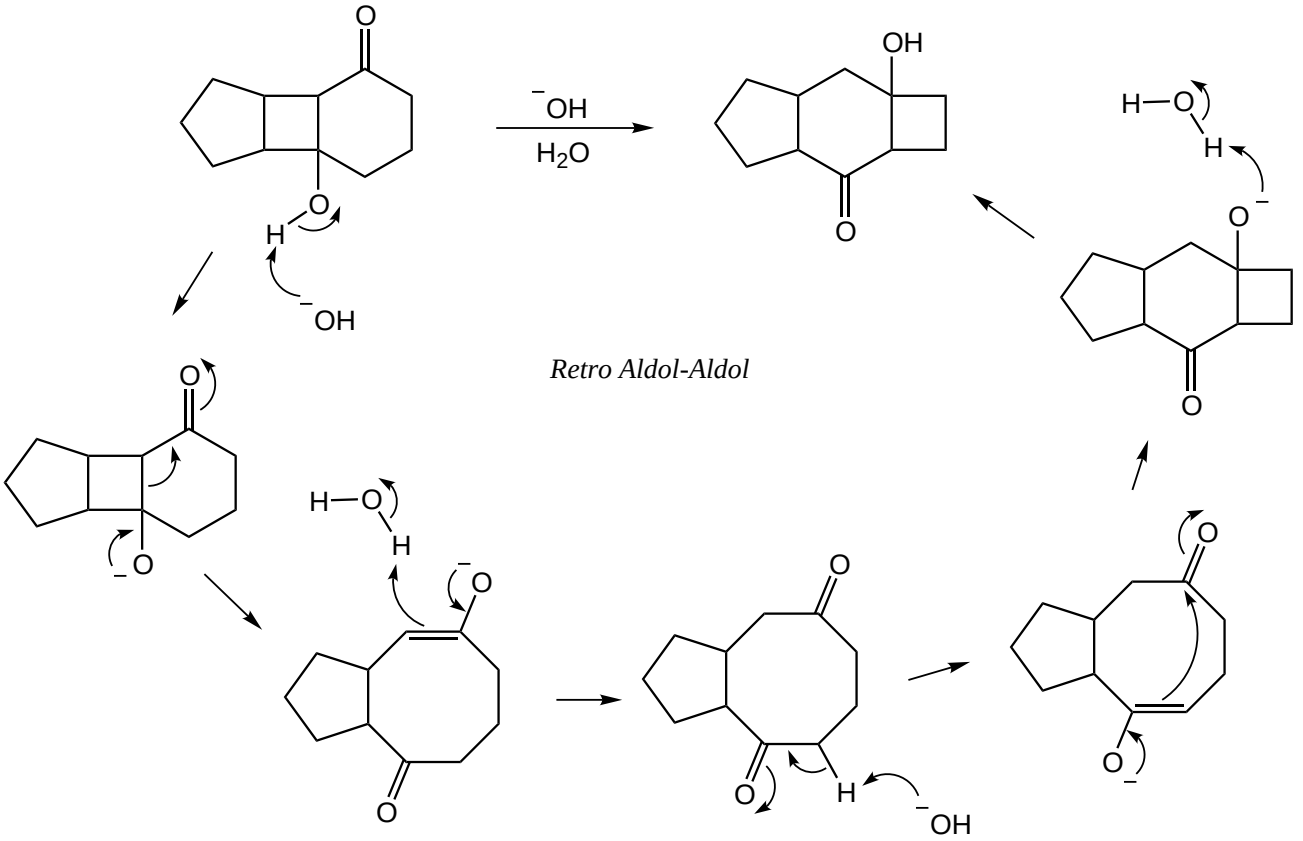
A **B** **C**

B	**C**	**A**

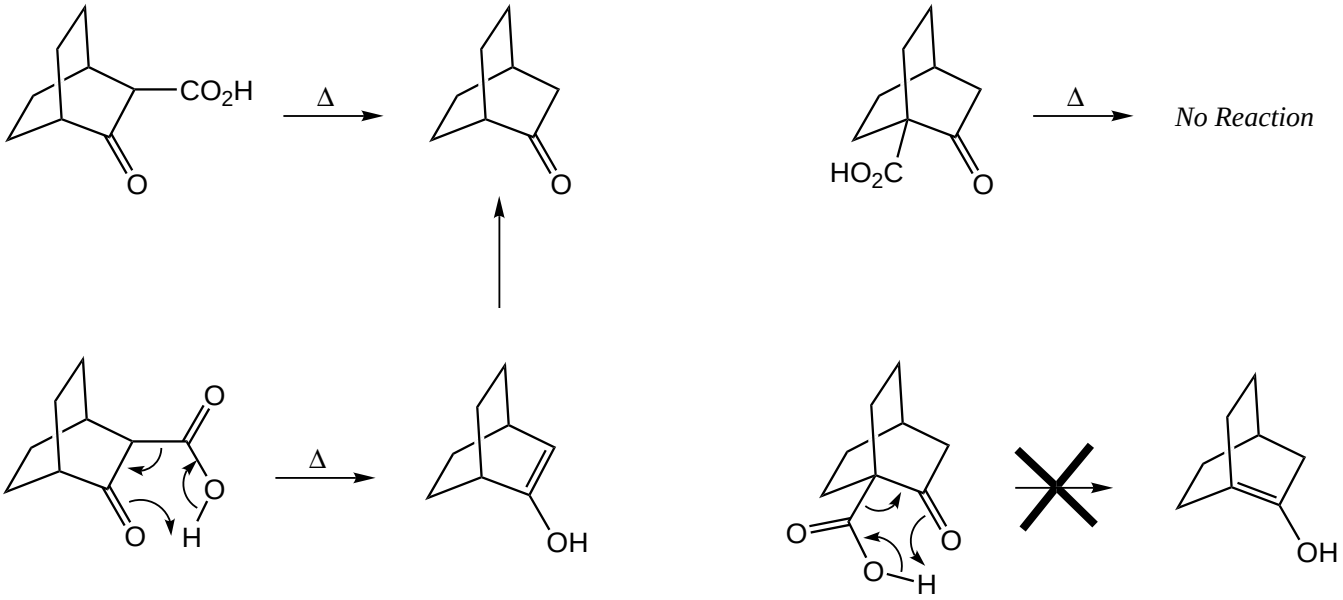
Lowest Frequency ⟶ *Highest Frequency*

Name: _____

4. a. (10 pts) Provide a mechanism for the following transformation.



b. (10 pts) Provide a detailed mechanistic explanation for the following reactions:



This is a straightforward decarboxylation, which proceeds as shown through the enol.

In this case, formation of the enol is not possible, so decarboxylation cannot occur.

Name: _____

5. (15 pts) Predict the product AND provide a detailed mechanism for its formation.