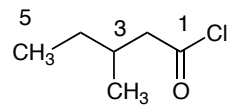
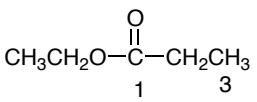
Long Island University, Department of Chemistry

Chem. 122, Sect 007, Exam 3, 100 pts, Spring, 2012

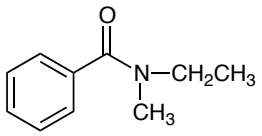
1. Name the following compounds. (15 pts)

(a) 

3-methylpentanoyl chloride

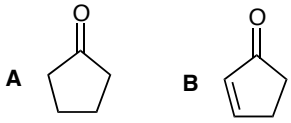
(b) 

ethyl propanoate

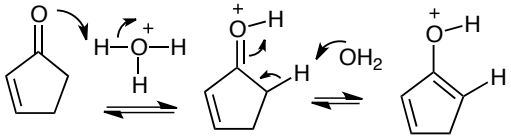
(c) 

N-ethyl-N-methyl benzamide

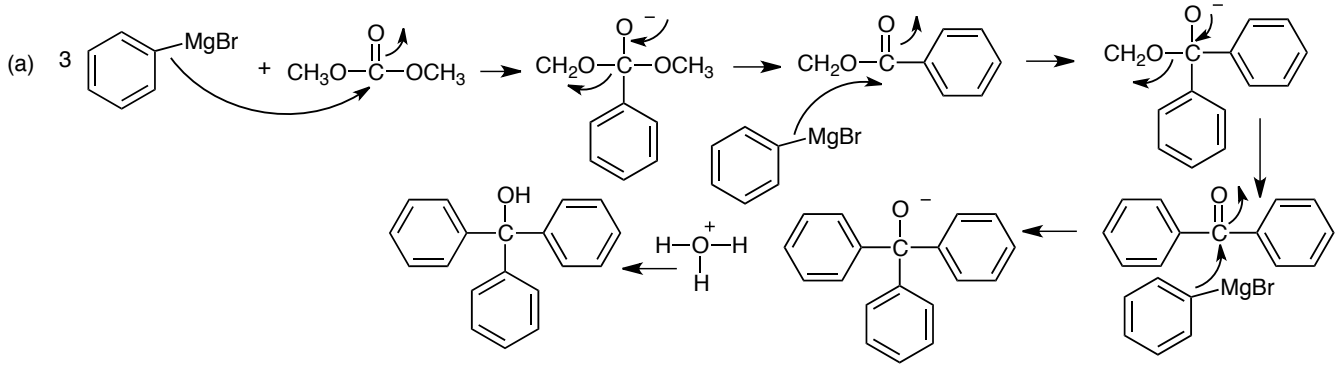
2. Look at molecules **A** and B. Which compound would form the greater concentration of enol in acidic conditions? Briefly explain your choice and show the complete reaction mechanism for enol formation for the molecule you choose. (5 pts)

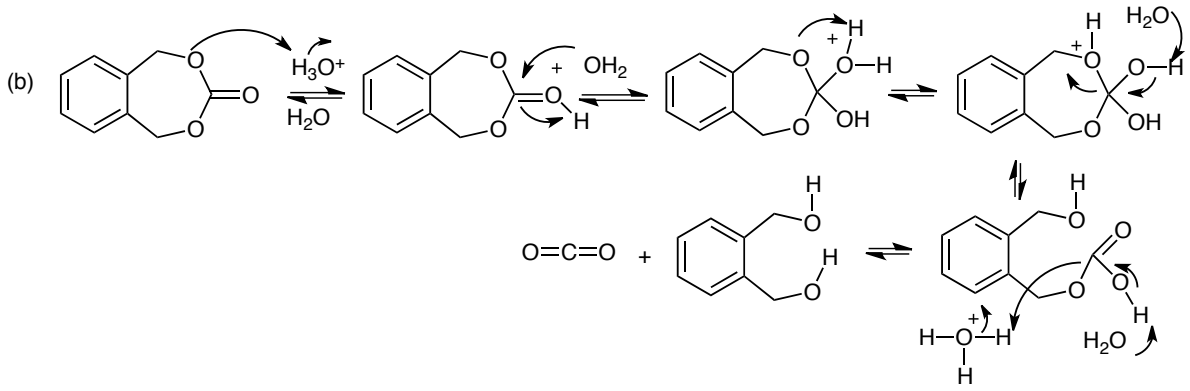


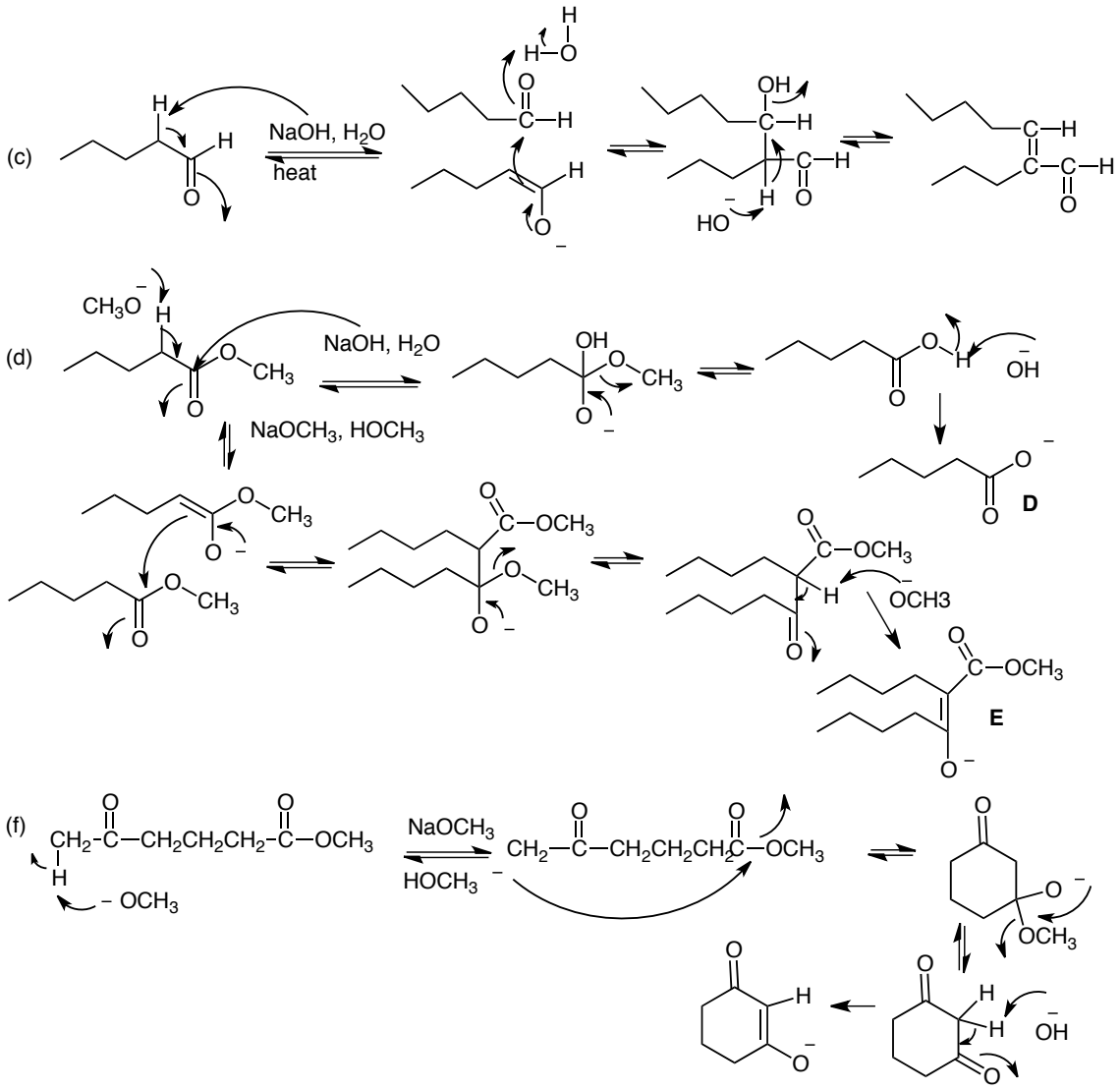
B will from a greater concentration of enol in acidic conditions since the enol will be conjugated with the double bond.



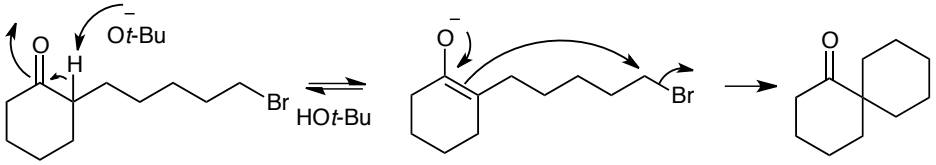
3. Give the product of the following reactions and in each case show the complete reaction mechanism by which it is formed. (50 pts)

(a) 

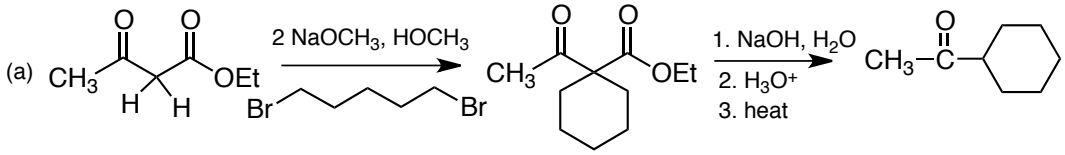
(b) 



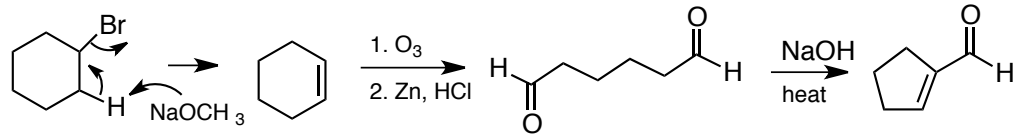
4. Show how the following reaction occurs, giving all steps of the mechanism. No other reagents are needed except those given. (10 pts)



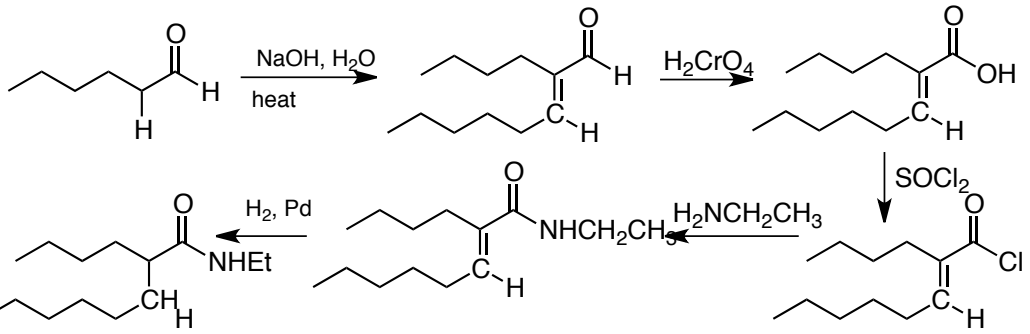
5. Synthesize **TWO** of the molecules shown on the right from the starting materials given on the left. Do all three for extra credit. (20 pts).



(b)


Br
H
NaOCH 3
1. O3
2. Zn, HCl
O
H
O
NaOH
heat
O
H

(c)


O
H
H
NaOH, H2O
heat
O
H
C
H
H2CrO4
O
OH
C
H
SOCl2
O
Cl
C
H
H2NCH2CH3
O
NHCH2CH3
C
H
H2, Pd
O
NHEt
CH
H