CH 310N
Fall 2006

Ansiyn

September 28th, 2006

Exam 1

Print Name_____ **UT-EID**_____

Half of these problems are from Problem 16.15 from your homework!-----> 1) _____ (12 pts)

2) _____ (8 pts)

3) _____ (8 pts)

Half of these problems are from your homework!---------- > 4) _____(39pts)

5) _____ (10 pts)

6) _____ (10 pts)

7) _____ (10 pts)

Problem 15.11 from your homework!----------> 8) _____ (8 pts)

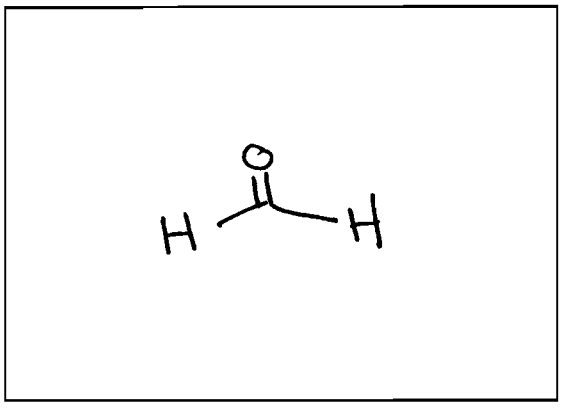
Problem 16.55 from your homework!----------->9) _____ (8 pts)

Total score _____ (113pts)

1) Name the structure or draw the structure of the nomenclature provided in the box. (12 points)

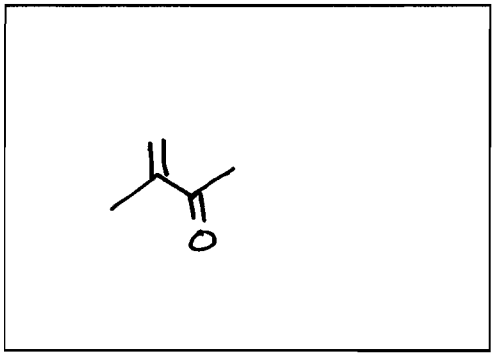
A)

Draw formaldehyde



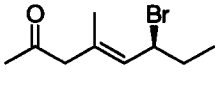
B) From homework, problem 16.15.

Draw 3-methyl-3-buten-2-one



C)

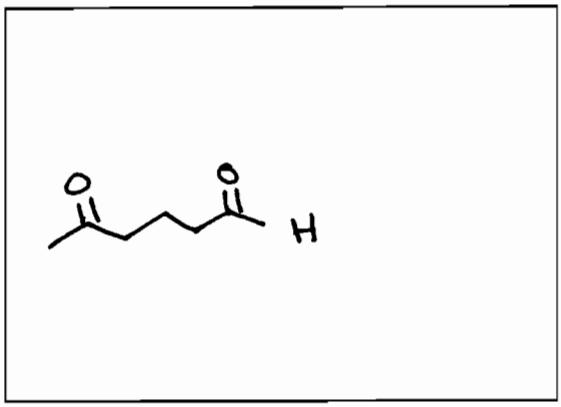
Name the structure



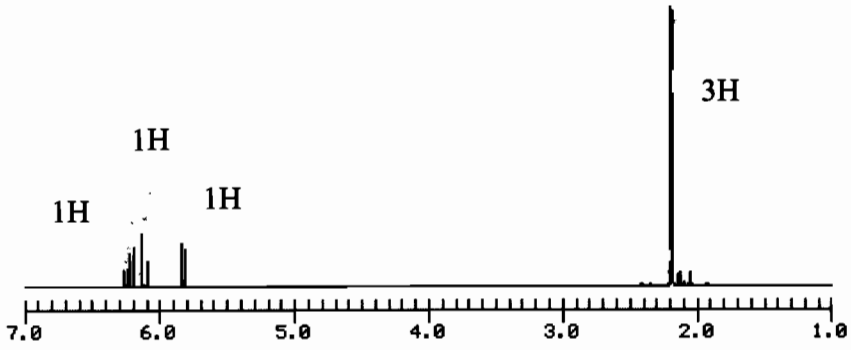
6S-Bromo-4-methyl-4E-octen-2-one

D) From homework, problem 16.15.

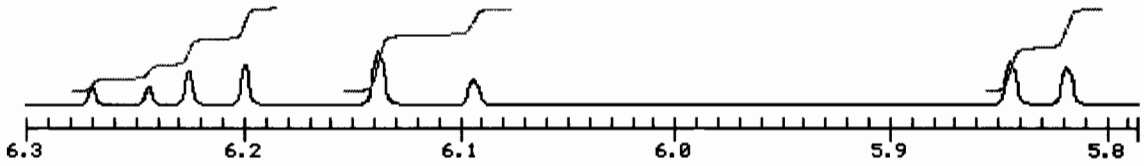
Draw 5-oxohexanal

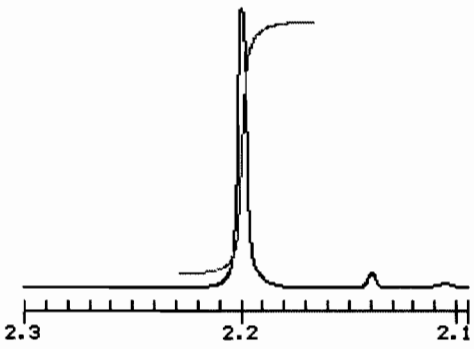


2) The following is the ^{1}H-NMR spectra for C_4H_6O. Draw the chemical structure of this compound in the box provided and provide the IUPAC name of the structure using the spectrums provided below. (8 points)

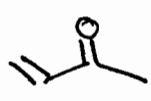


Expansion of peaks:

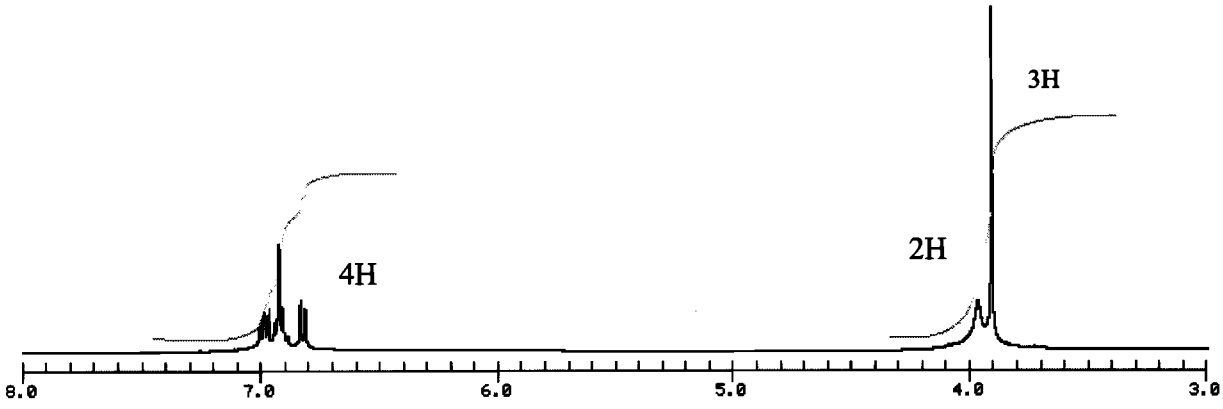




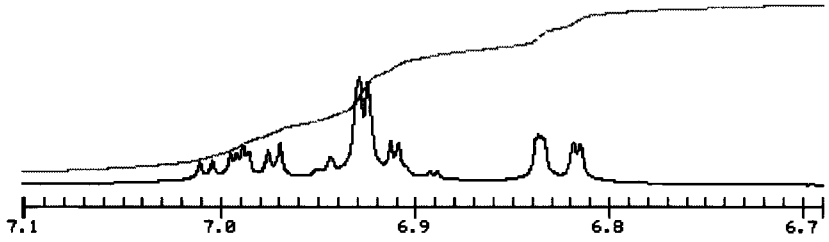
3-buten-2-one

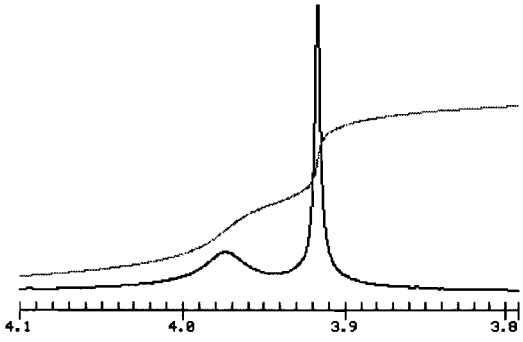


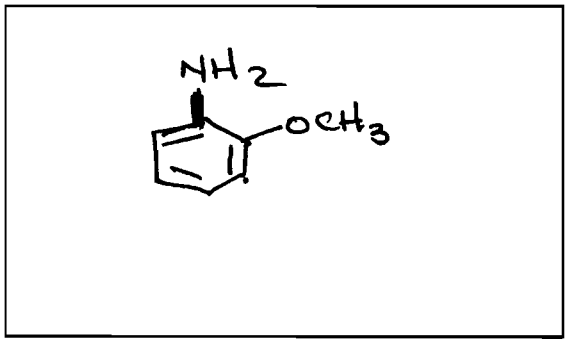
3) Following is the ^{1}H-NMR spectra for C_7H_9NO. Draw the chemical structure of this compound in the box provided from the spectrums provided. (8 points)



Expansion Pictures:

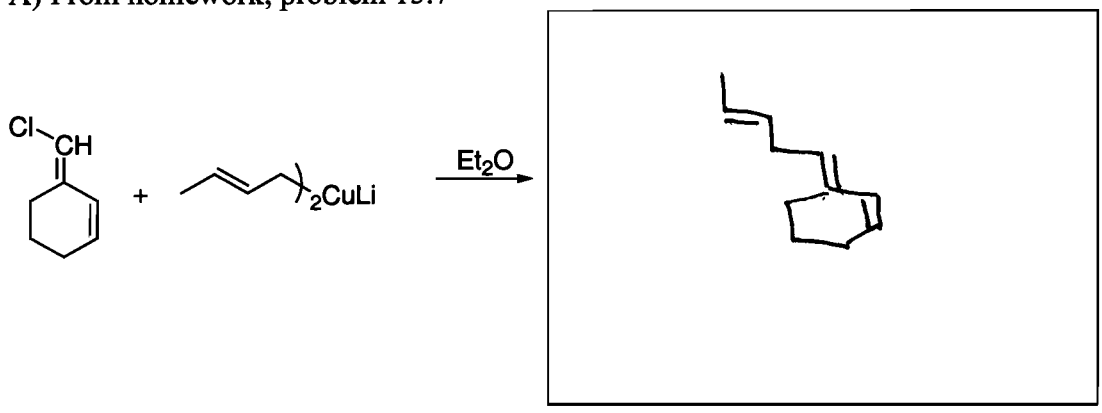




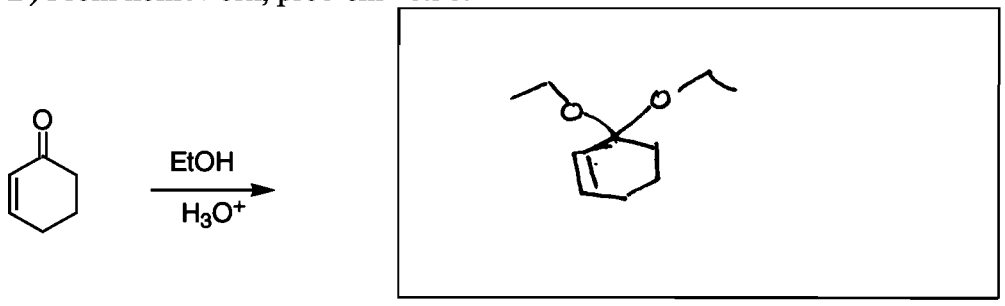


4) Fill in the box with the correct reagent, reactant or product. (39 points)

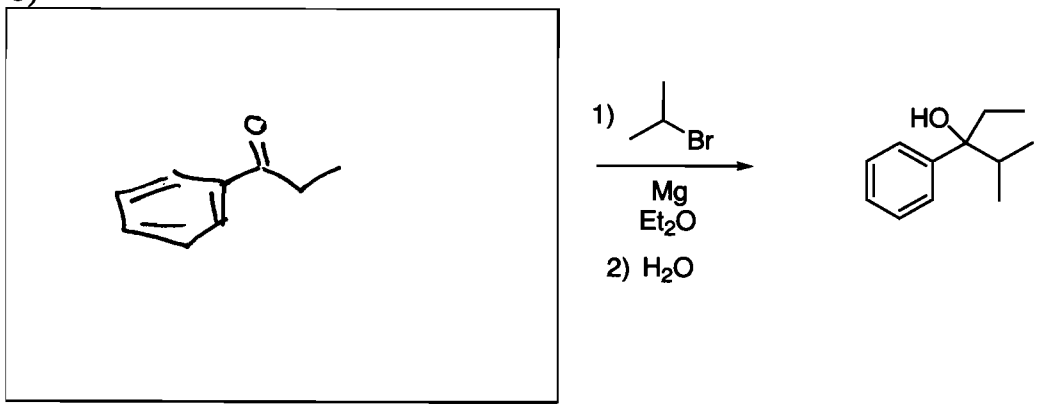
A) From homework, problem 15.7



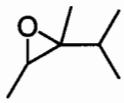
B) From homework, problem 16.30.



C)

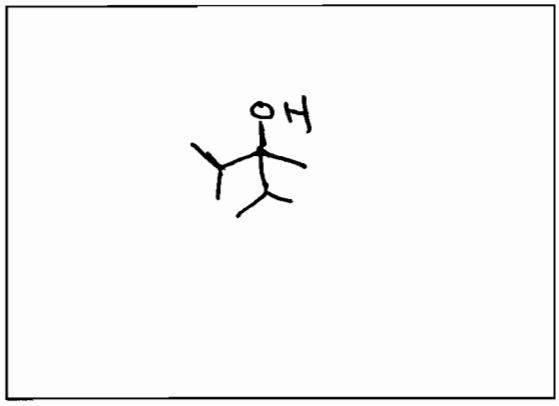


D)

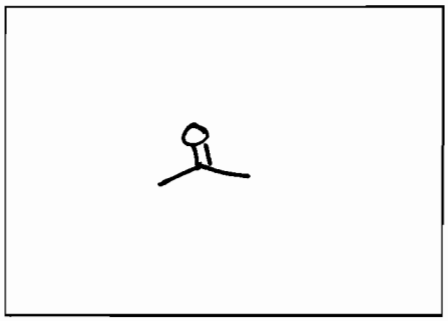


1) $H_3C-MgBr$

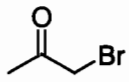
2) H_3O^+



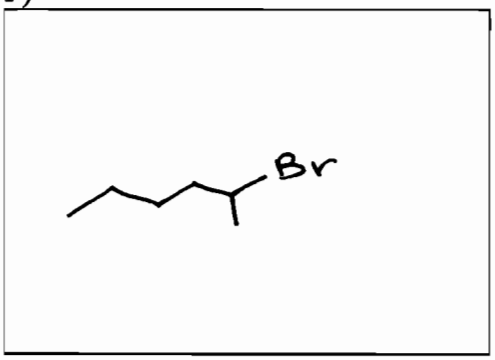
E)



$\xrightarrow[Br_2]{NaOH}$

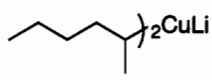


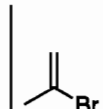
F)

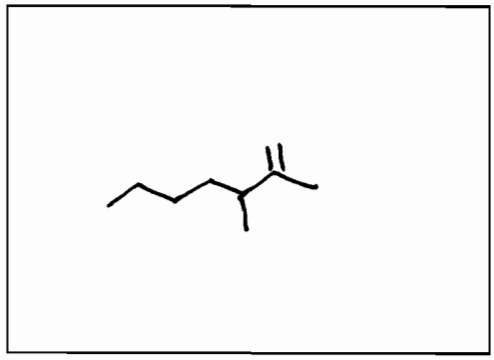


1) Li, pentane

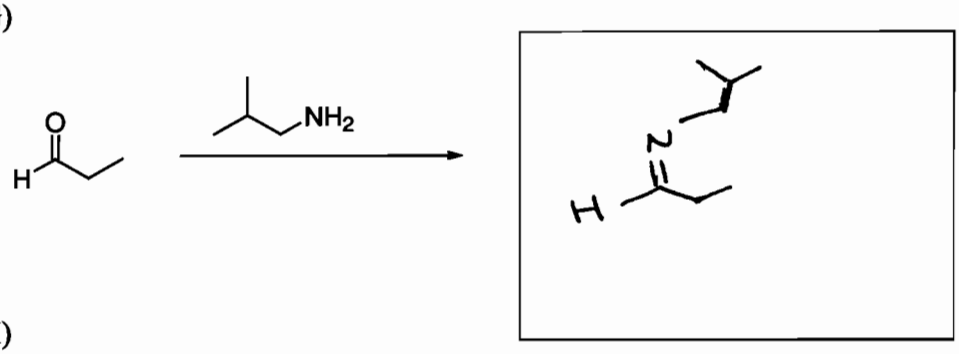
2) CuI



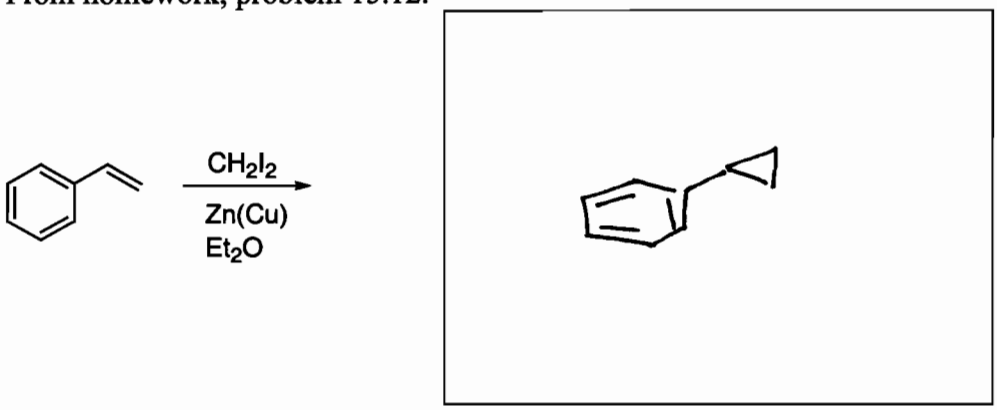




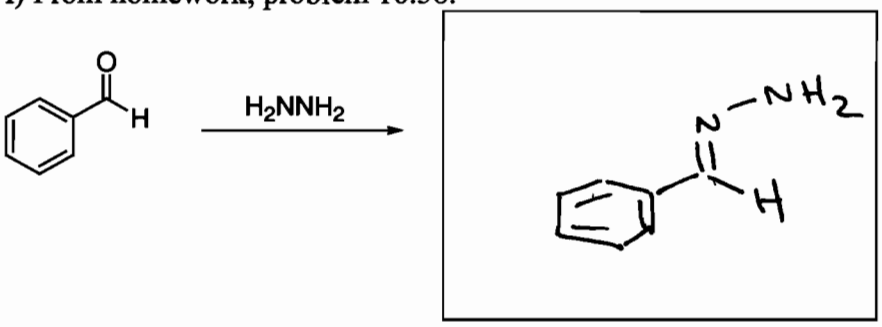
G)



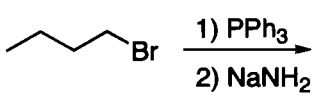
H)
From homework, problem 15.12.

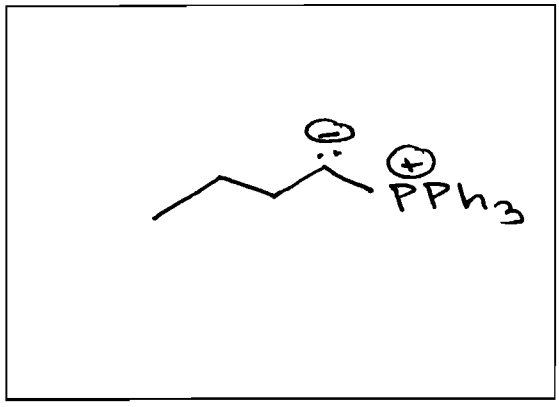


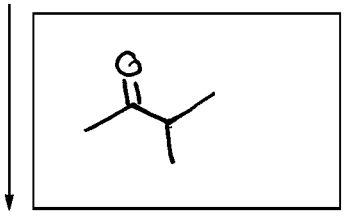
I) From homework, problem 16.38.

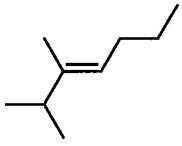


J)

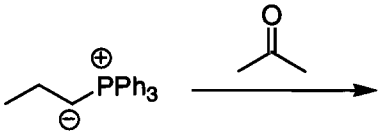


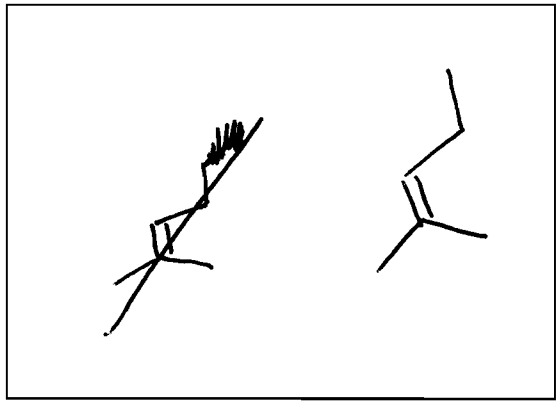




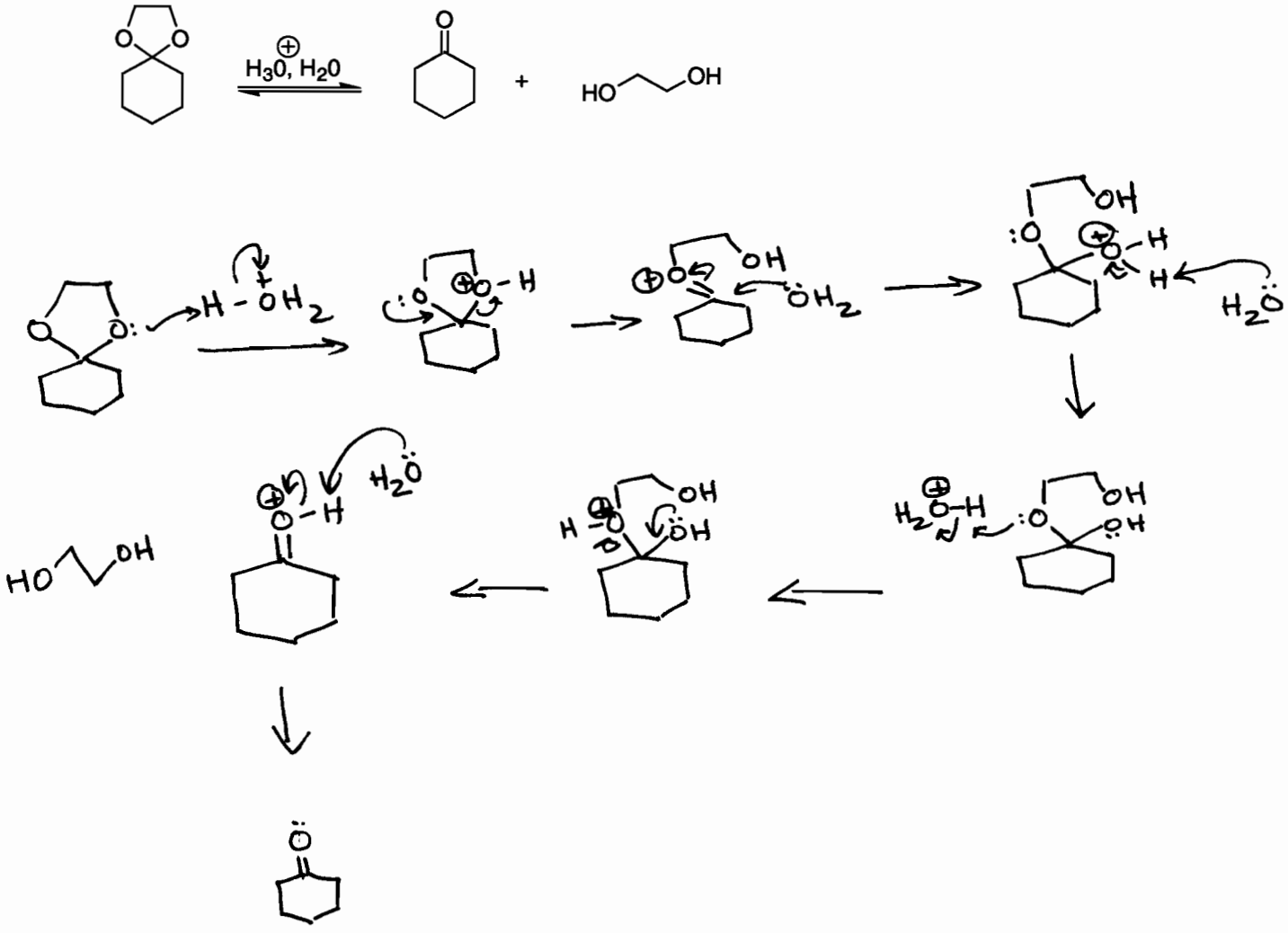


K)

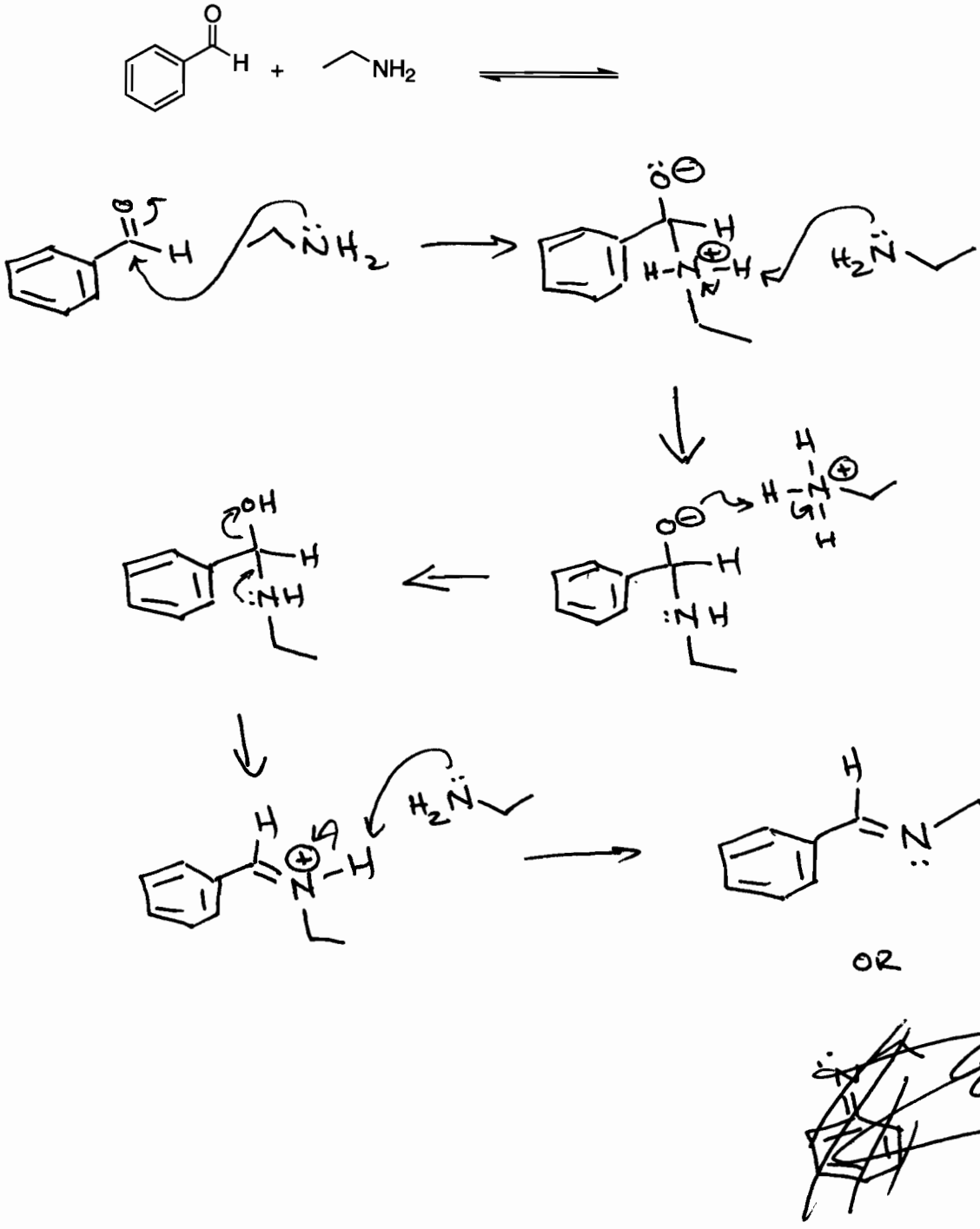




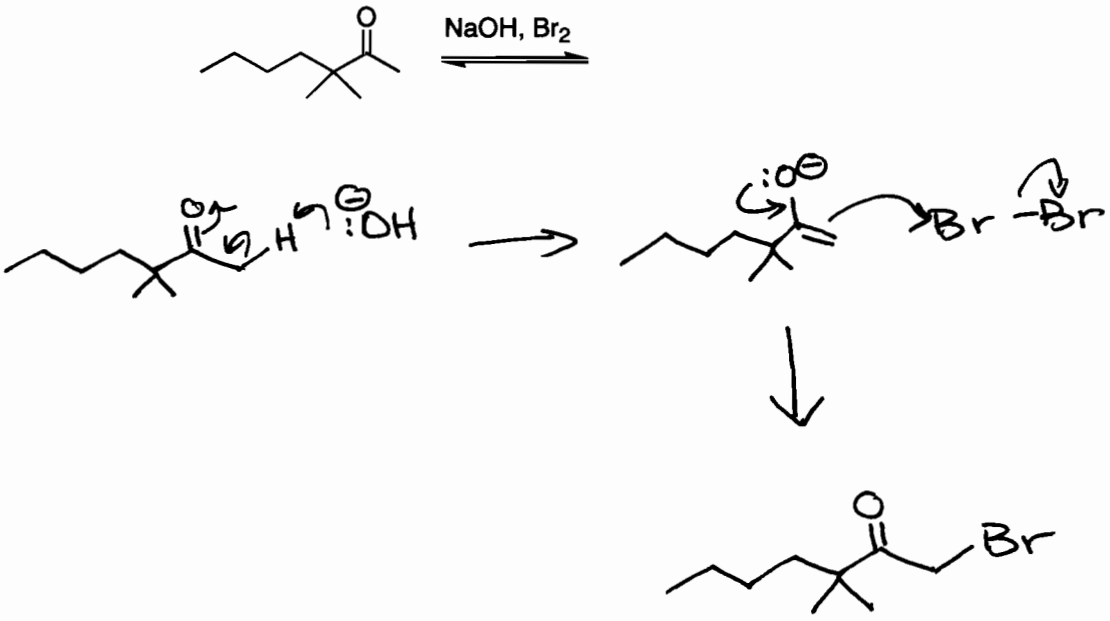
5) Provide a mechanism for the following reaction. Show all arrow pushing and intermediates. Show any lone pair electrons you use as a nucleophilic source or that are created during arrow pushing. (10 points)



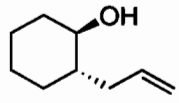
6) Draw the products of the following reactions. Propose a mechanism for the reactions. Be sure to show all intermediates and curved arrows for each step. Show any lone pair electrons you use as a nucleophilic source or that are created during arrow pushing. (10 points)



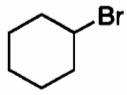
7) Draw the products of the following reactions. Propose a mechanism for the reactions. Be sure to show all intermediates and curved arrows for each step. Show any lone pair electrons you use as a nucleophilic source or that are created during arrow pushing. (10 points)



8) Show how to synthesize:

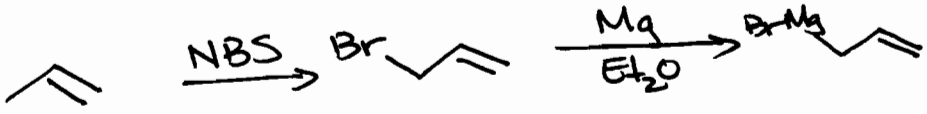


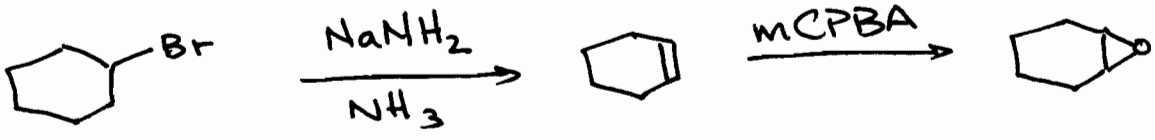
using

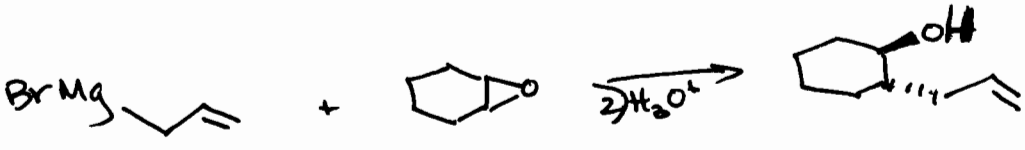


and

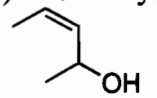
Use only the reagents given as a source of carbon. You may use any inorganic reagents necessary. Do not worry about arrow pushing (mechanism). (8 points)
(Problem 15.11 in homework)







9) Show a synthesis of



from ,  and CH_3I

Use only the reagents given as a source of carbon. You may use any inorganic reagents necessary. Do not worry about arrow pushing (mechanism). (8 points)
(Problem 16.55 in homework)