

Please print:

Last name: _____

First name: _____

Chem 2062 Exam 3, Individual Portion

Spring 2006

Andy Aspaas, Instructor

Monday, April 10, 2006

Instructions:

You have 55 minutes to complete this portion of the exam.

5 questions are included in this portion of the exam, worth a total of 80 points.

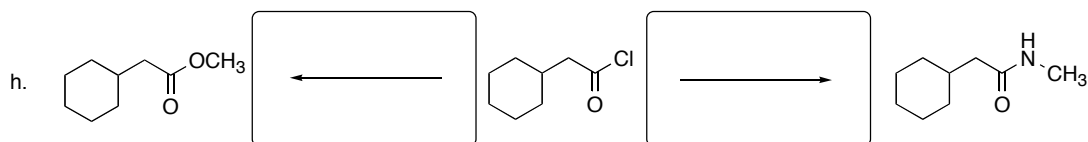
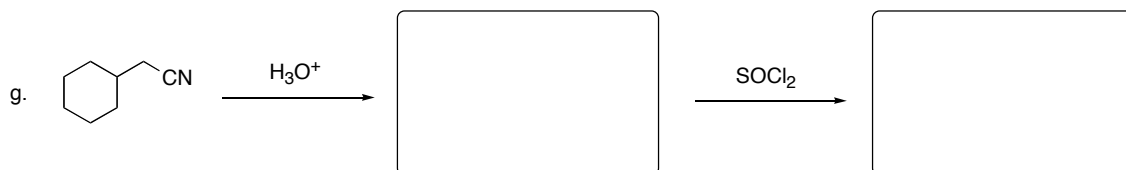
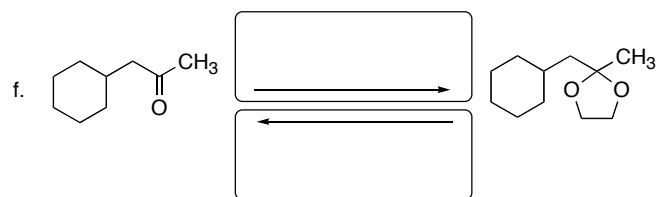
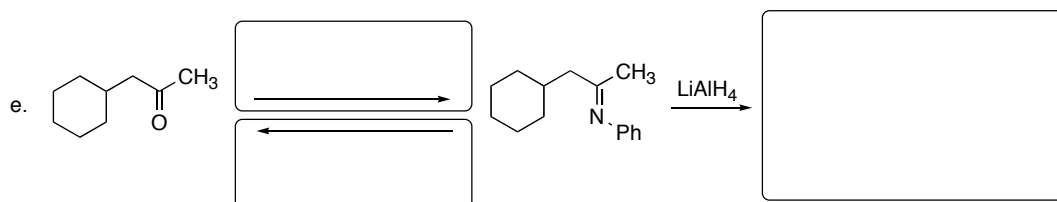
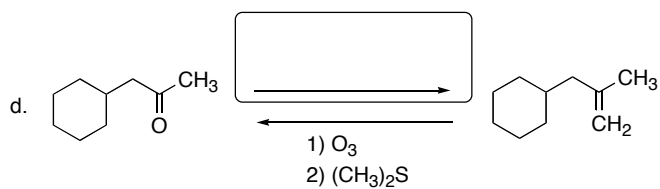
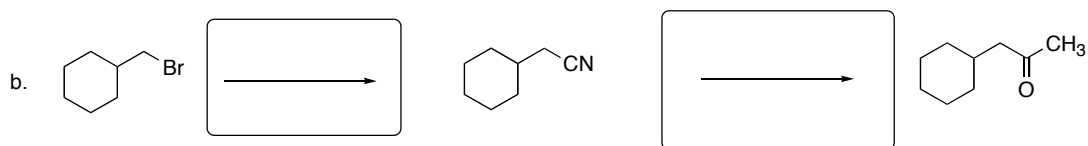
The remaining 20 points of the exam will be completed in groups tomorrow. It will involve organic synthesis and retrosynthesis, so prepare accordingly.

No model kits or calculators may be used.

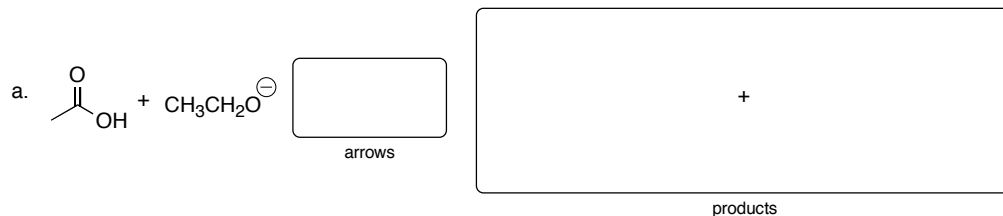
I, _____ have read and understand the directions given above, and pledge that I will follow all regulations with regard to Academic Dishonesty as outlined by this college when taking this exam.

Signature _____ Date and Time _____

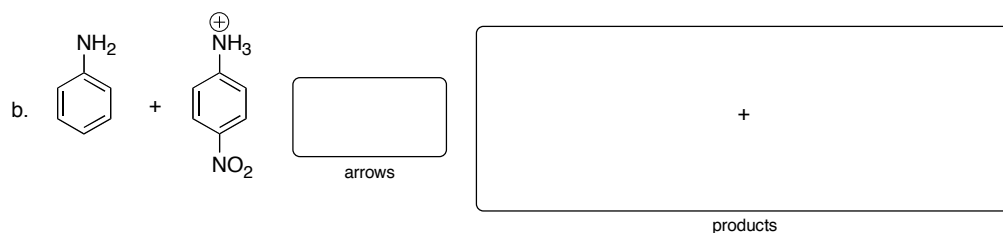
1. (30 pts) Complete the following reactions by drawing the missing reagents, organic reactants, or organic products in the boxes. **Count your carbons!**



2. (10 pts) Predict the most likely products for the following acid/base reactions, and indicate with proper arrows the direction in which the equilibrium lies (*i.e.* to the left or to the right). Briefly explain your rationale.

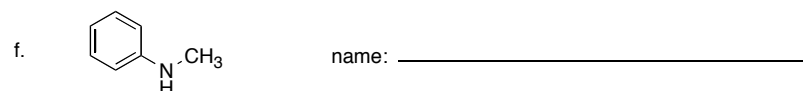
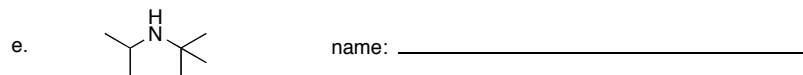
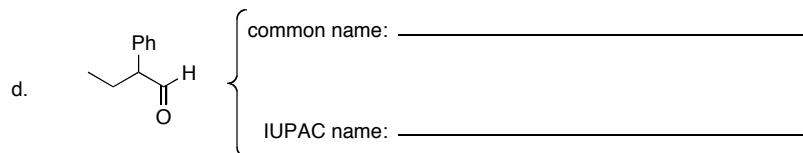
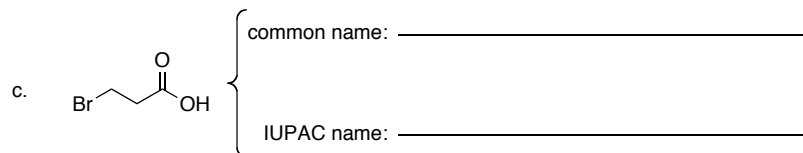
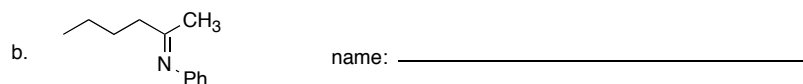
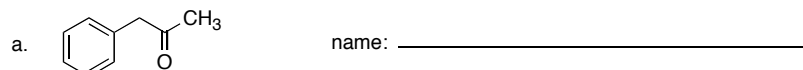


Explanation:

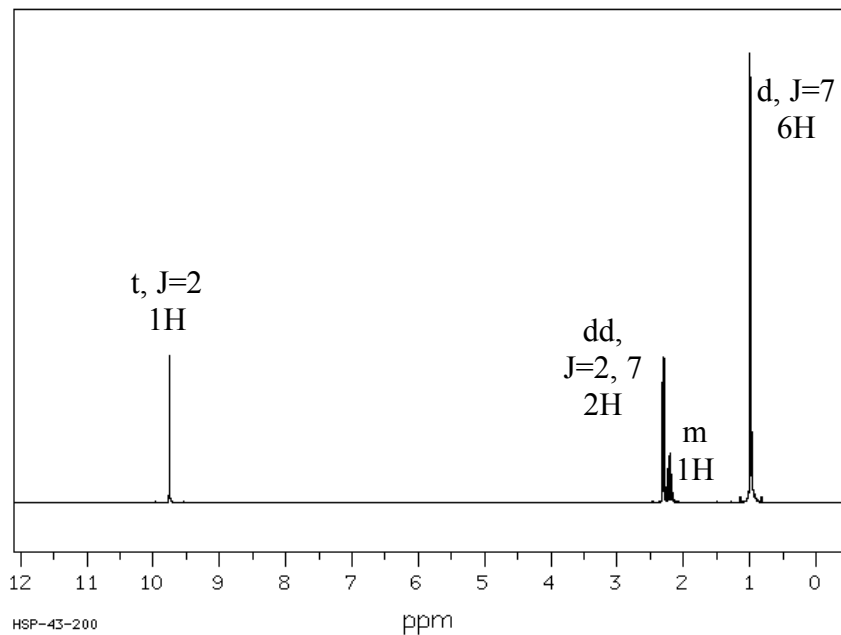


Explanation:

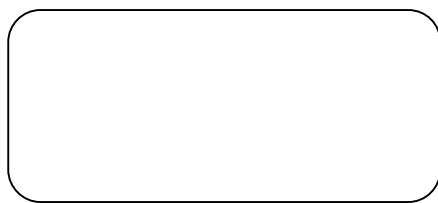
3. (16 pts) Name these compounds:



4. (10 pts) Identify the compound which has the following ^1H NMR spectrum and MS data:

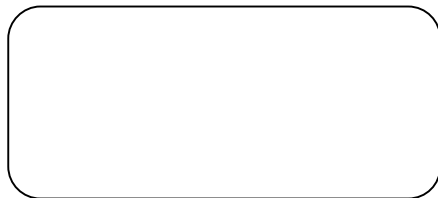


MS molecular ion: 86 m/z. MS base peak: 44 m/z.



structure

Draw the fragment that accounts for the MS base peak.
(Hint, it comes from a McLafferty rearrangement)



44 m/z fragment

5. (14 pts) **Choose one** of the following reactions, predict its products and draw its full mechanism.

