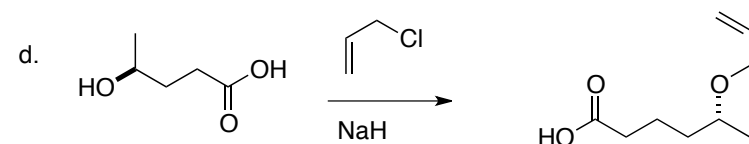
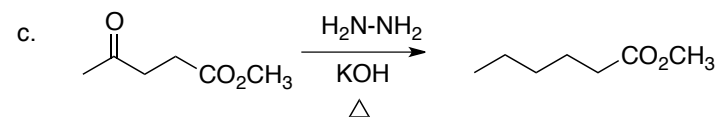
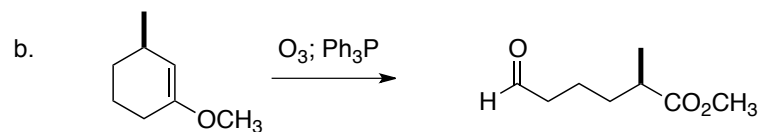
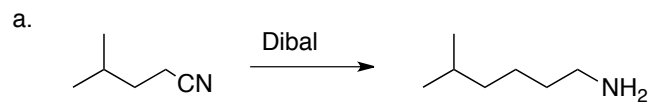


Chem 332
Spring 2012
Exam #1
Feb. 29, 2012

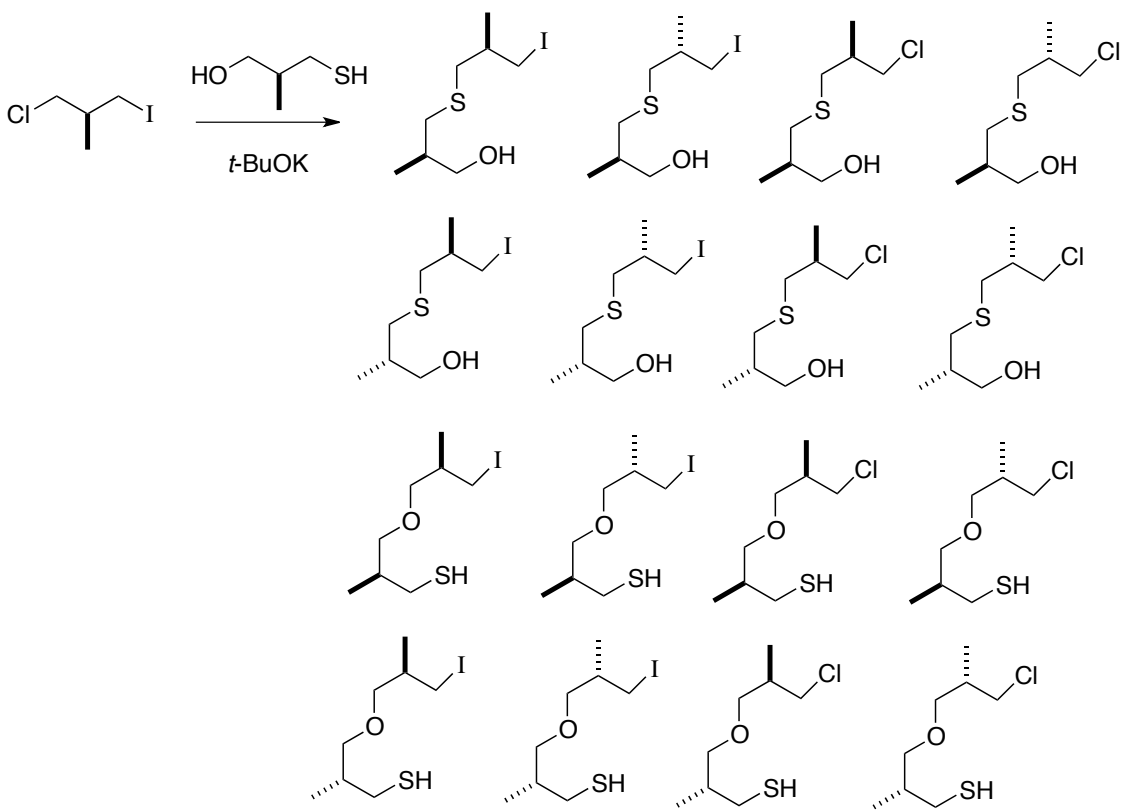
Name _____

This is an open-book, open notes exam. No electronic devices are allowed.

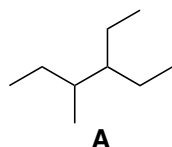
1. (5 points each) These reactions would not proceed as indicated. Please draw the correct product of each reaction.



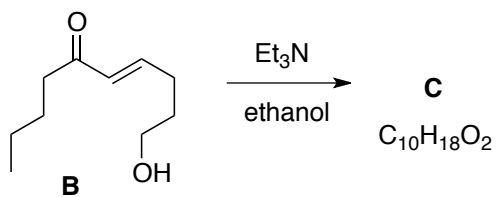
2. (20 points) Circle the correct product, and explain why.



3. (20 points) Outline a synthetic route to **A**. You may use any starting material that contributes three or fewer carbons to the final product.



4. (20 points) Deduce the structure of **C**, and outline an arrow-pushing mechanism for its formation.



IR: 2958, 2872, 1712, 1465, 1380, 1040 cm^{-1}

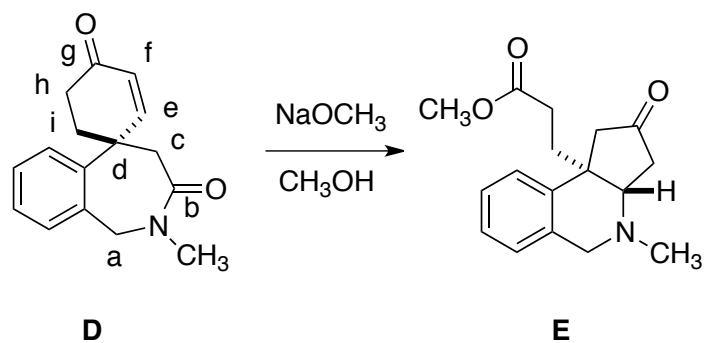
^{13}C NMR

209.5, s
 75.1, d
 67.8, t
 48.6, t
 43.3, t
 31.5, t
 25.7, t
 25.6, t
 22.3, t
 13.8, q

^1H NMR

0.89, t, $J = 7.3$ Hz, 3H
 1.3-2.1, m, 8H
 2.45, t, $J = 7.5$ Hz, 2H
 2.51, dd, $J = 6.0, 15.6$ Hz, 1H
 2.73, dd, $J = 6.9, 15.6$ Hz, 1H
 3.72, m, 1H
 3.85, m, 1H
 4.21, m, 1H

5. (20 points) Draw an arrow-pushing mechanism for the conversion of **D** to **E**. Correct labelling is worth three points, and correct bb/bf an additional three points.



bb	bf