

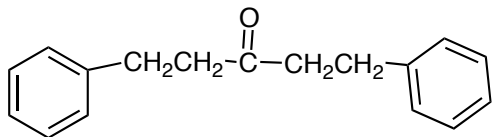
ANSWER KEY

Long Island University, Department of Chemistry

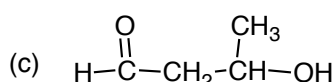
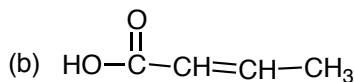
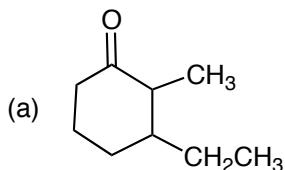
Chem. 122, Sect 012,

Exam 2, 150 pts, Spring, 2011

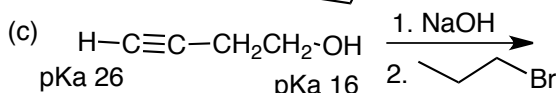
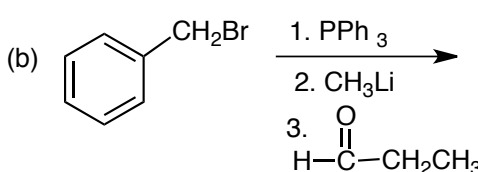
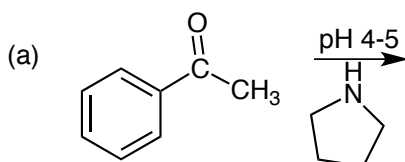
1. Predict the NMR spectrum for the following molecule, giving (a) the number of carbon signals (b) the number of proton signals and the multiplicities of the proton signals and (c) give three significant IR absorptions and indicate what functional group each absorption corresponds to. (15 pts)



2. Name the following molecules. (15 pts)



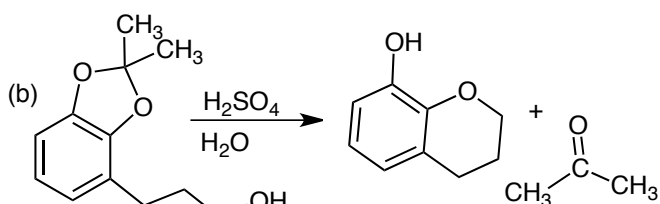
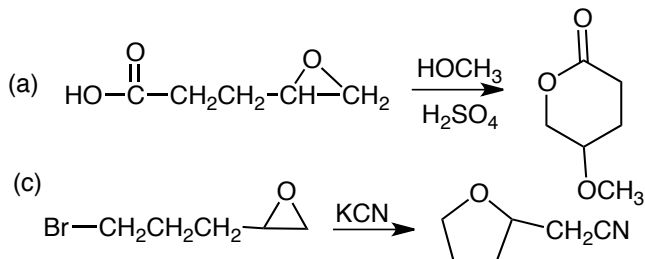
3. Give the product of the following reactions. It is not necessary to show the reaction mechanism but do show all intermediates formed. (30 pts, 10 pts each)



4. (a) Look A and B and choose which is the stronger acid and briefly explain your reasoning. (b) For C and D choose which molecule would form the greater concentration of hydrate and briefly explain your choice and show the reaction for the hydration in acidic conditions. (15 pts)



5. Show how the following transformations occur, giving all of the steps of the mechanisms. Not other reagents are needed except for those given. (45 pts)



6. Synthesize **two** of the following **three** molecules from the starting materials given on the left as shown. Do all **three** for extra credit. (30 pts)

