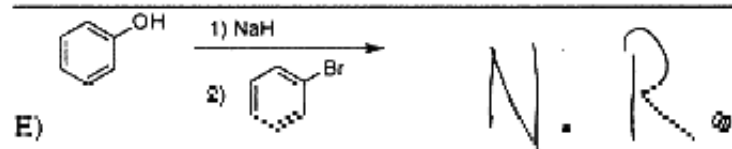
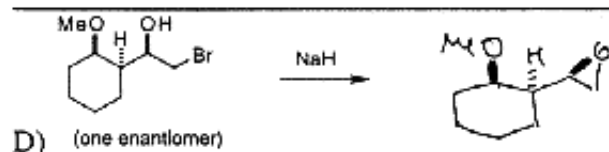
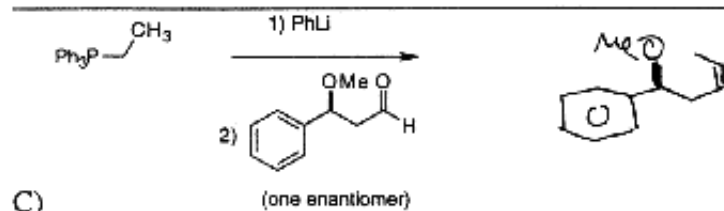
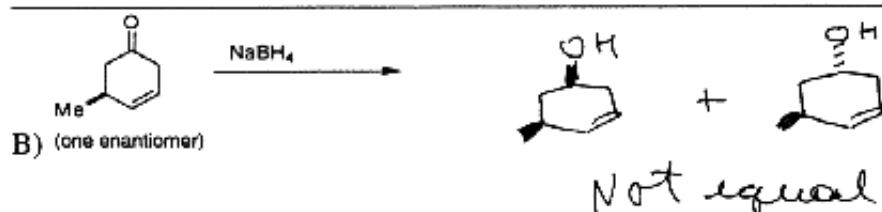
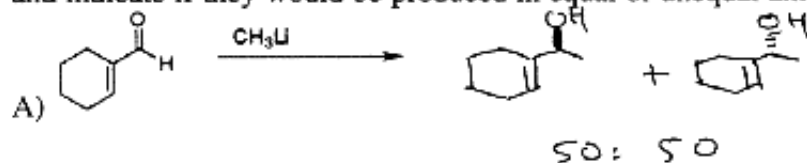
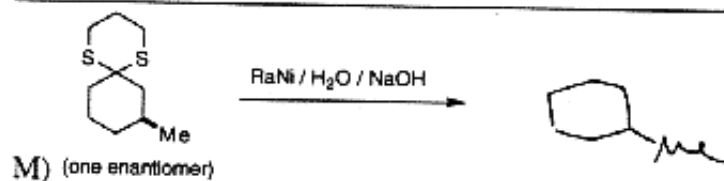
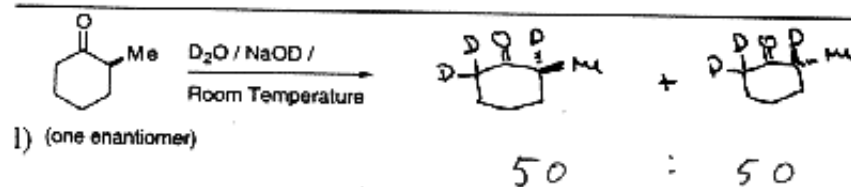
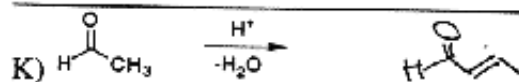
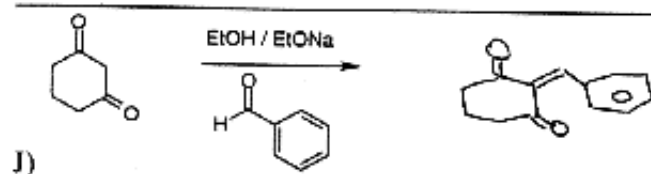
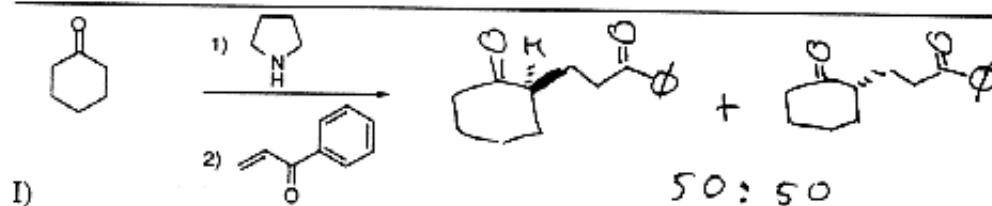
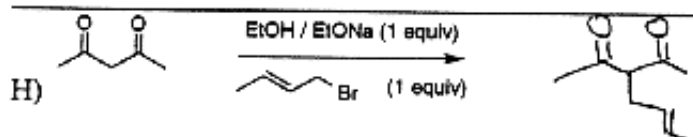
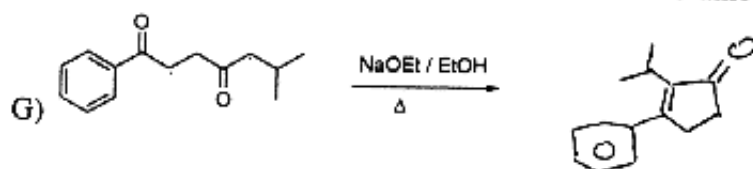


1) Provide the products of the following reactions. If no reaction would occur, then write NR. Draw all possible stereoisomers (i.e., draw dashed and bold lines as needed) and indicate if they would be produced in equal or unequal amounts. (4 points each)

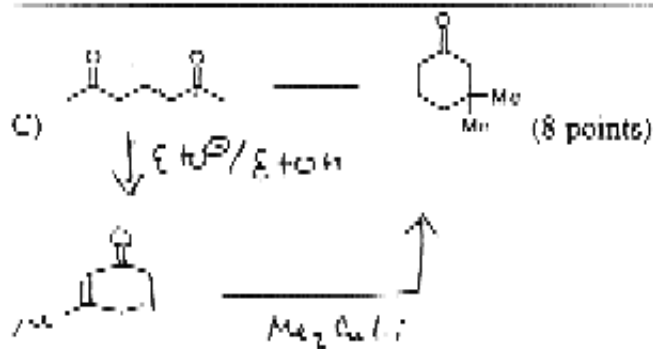
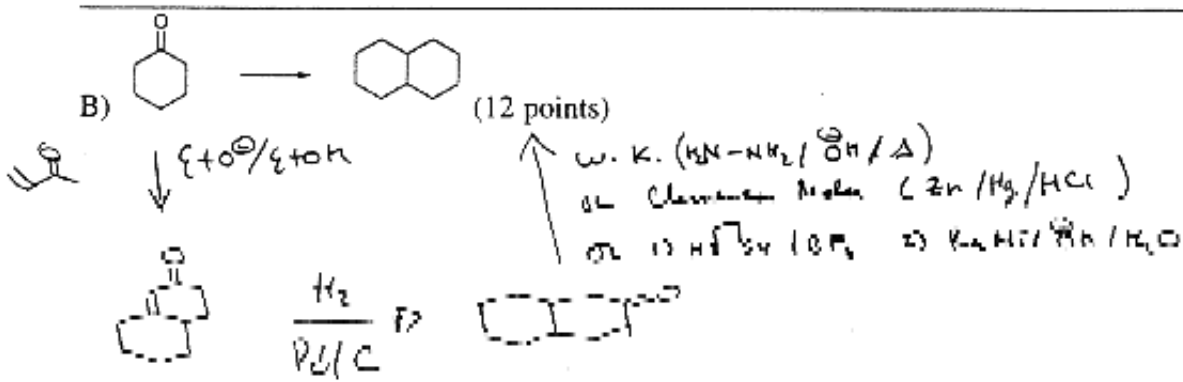
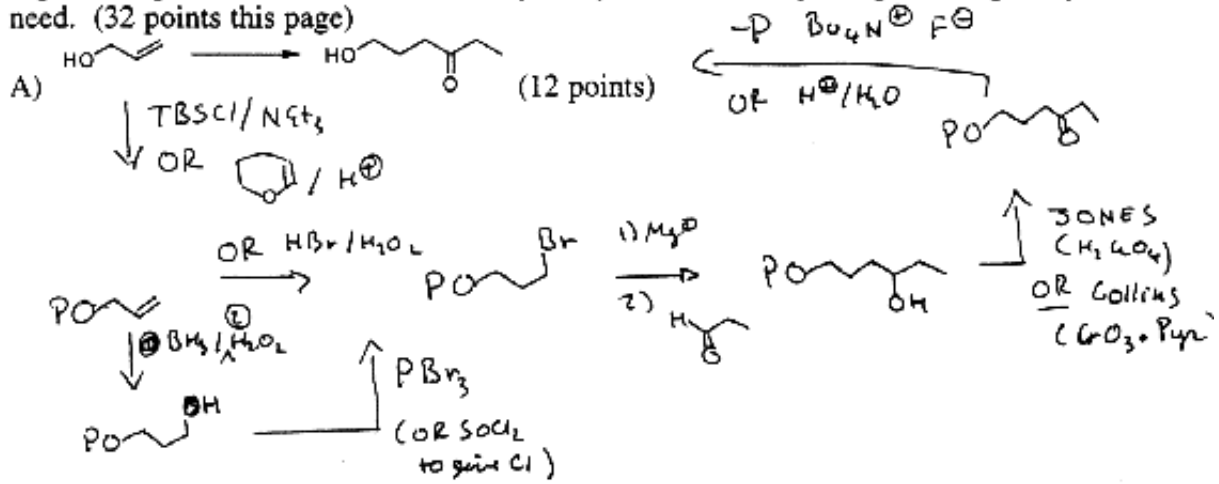


Name _____

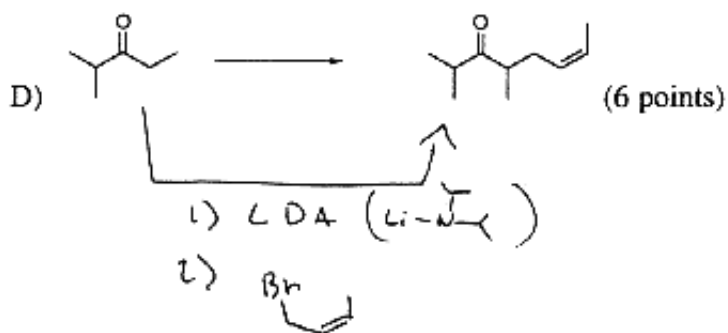


Name _____

2) Provide the reagents required to complete the following syntheses. You may use organic reagents of 6 carbons or less in your syntheses and any inorganic reagents you need. (32 points this page)



Name _____



3) Provide the mechanism for the reaction shown below. Be sure to draw each arrow, show every formal charge, and show each step of the reaction for full credit. Be sure your answer is legible!

