

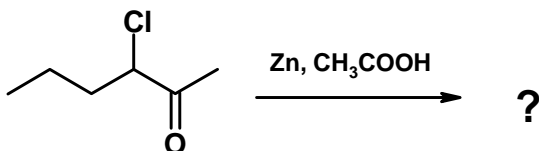
Dept. of Chemistry and Biochemistry
School of Physical Sciences

59-331/333
Test #2

Mar. 24, 2004
Time: 55 minutes

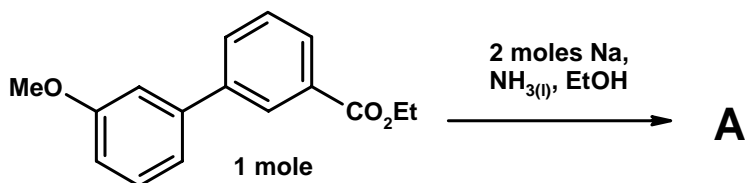
Answer all questions in the test booklet(s) provided. Answers written in pencil will be marked, but cannot be returned for remarking.

1. Give the complete mechanism for the dissolving metal reduction of the following ketone. The stoichiometry (reagent ratio) is *not* indicated; it should be evident in your answer. (10 marks)

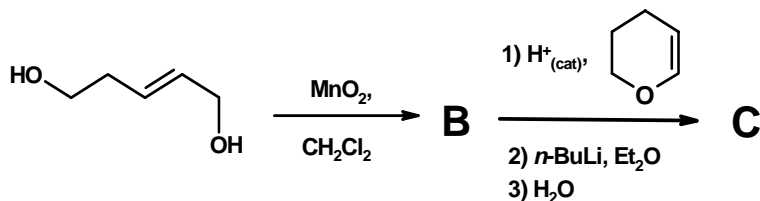


2. Indicate the structure of the expected major product from each of the following reactions. Include stereochemistry where it is relevant. Mechanisms are *not* necessary, but showing your work is likely to be a help. (5 for each letter, 40 marks total)

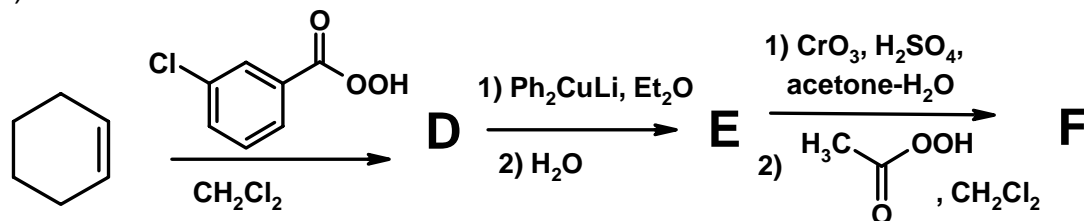
a)



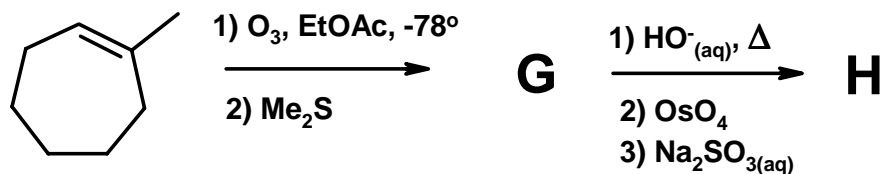
b)



c)

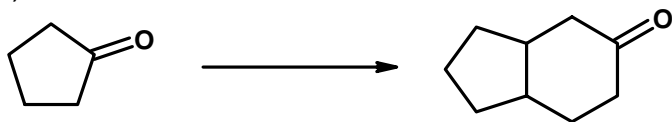


d)

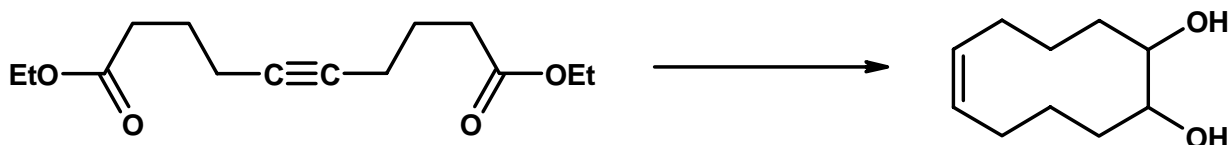


3. Show by equation how you would prepare the products illustrated below from the indicated starting material. You may use *any* other reagents you deem to be fit. Show all reagents, conditions, and *intermediates that could be isolated*. Mechanisms are not necessary, but showing your work may be a help. **DO ANY THREE** (10 each, 30 total)

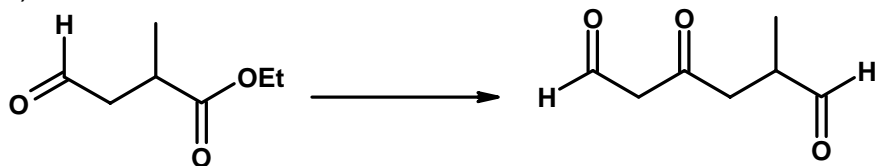
a)



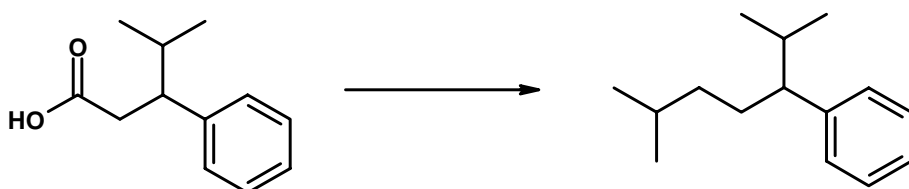
b)



c)



d)



Bonus (5 marks) Despite an apparent simplicity, not every reaction goes as planned...but what happens should make sense. Suggest what (unusual) occurs in the following reaction. The obvious transformation is not the correct answer.

