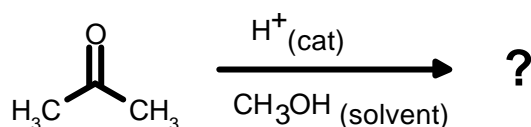


University of Windsor
School of Physical Sciences
Chemistry and Biochemistry

Chemistry 59-331/333
Test #2

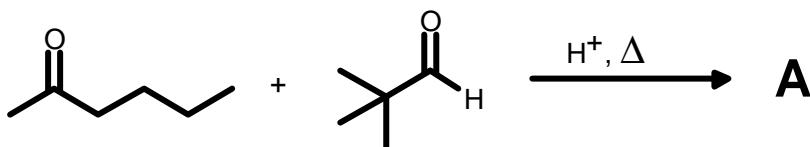
Mar. 5, 1999
50 minutes

1. Show the complete mechanism for the formation of an acetal from the acid catalyzed reaction of acetone and methanol. (10 marks)

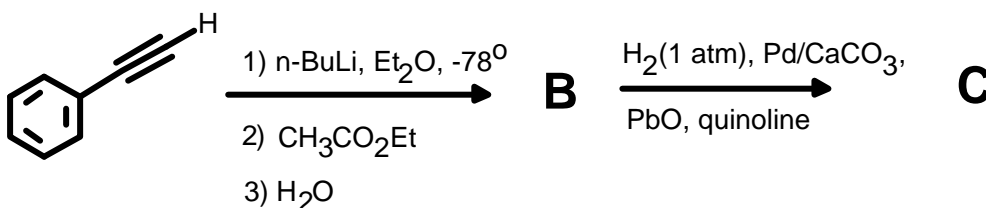


2. Indicate the structure of the major expected product of each of the following transformations. Include the product stereochemistry where it applies. Mechanisms are not necessary, but may be a help. (40 marks, 5 per letter)

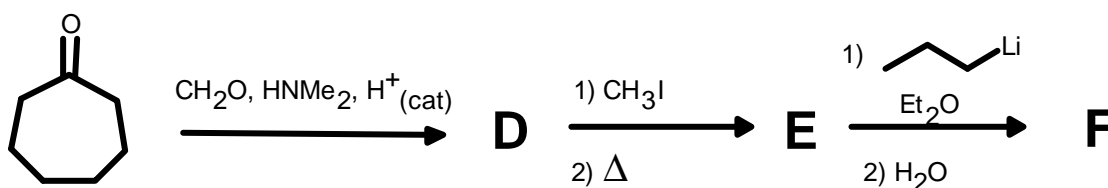
a.



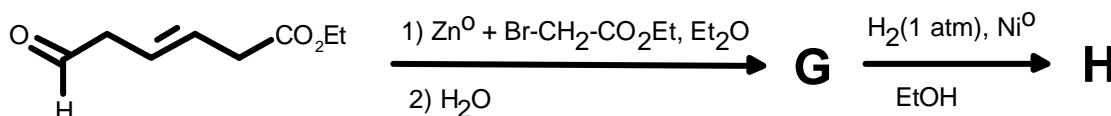
b.



c.

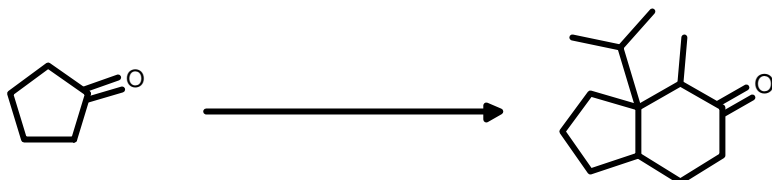


d.

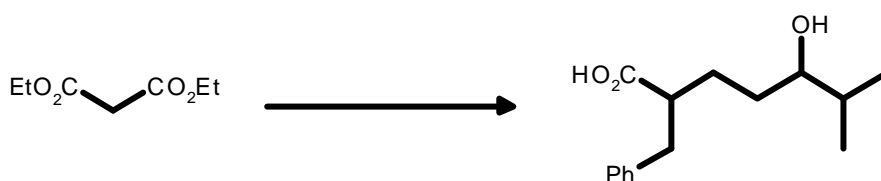


3. Show by equation how you would prepare the products illustrated from the given starting material. You may use any other reagent you deem fit. Show all reagents, conditions, and isolable intermediates. Mechanisms again are not necessary, but may be a help. **Note: Do any three of a-d.**(30 marks)

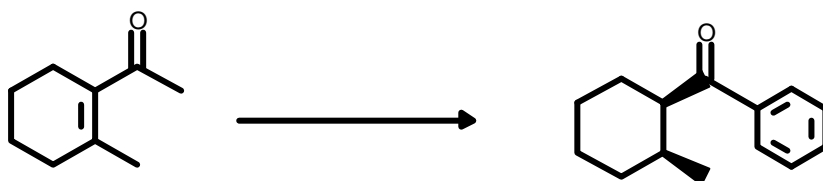
a.



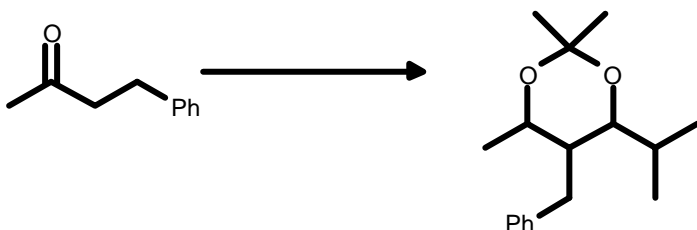
b.



c.



d.



Bonus The following reaction, called the Baylis-Hillman reaction, is getting increasing attention in the literature. What is the most likely mechanism for the reaction?

