

Massachusetts Institute of Technology

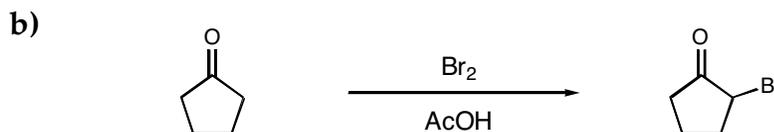
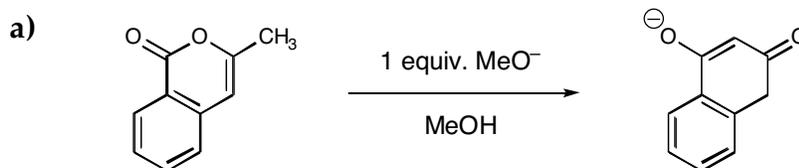
5.13: Organic Chemistry II

Fall 2003, S. Tabacco

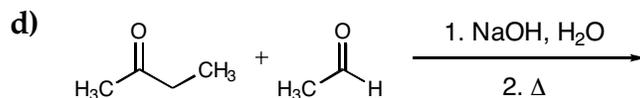
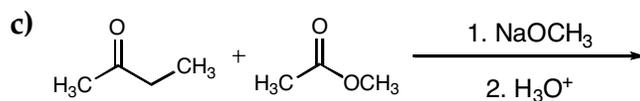
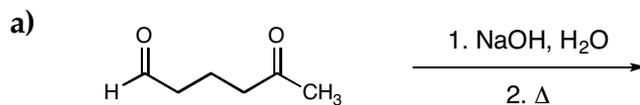
Problem Set 6

Due: Monday, 11/24/03 at 4 PM

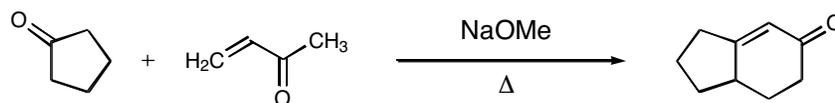
1. Please provide a mechanism for each of the following transformations.



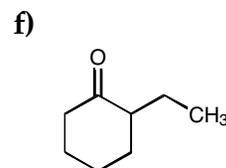
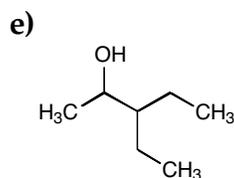
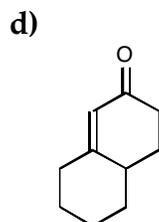
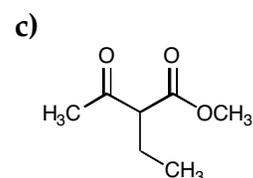
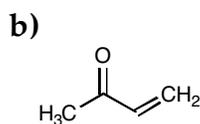
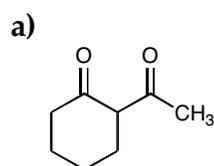
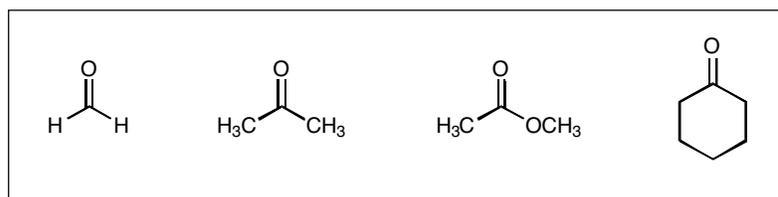
2. Please provide the products of the following reactions and indicate whether or not you expect the reaction to be selective. If you expect more than one product, show them all.



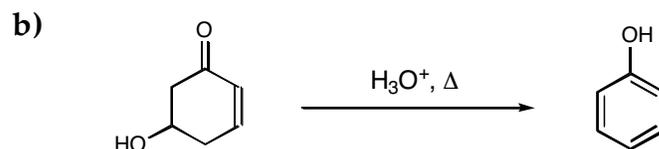
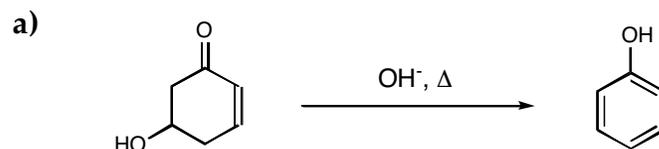
3. Please provide a mechanism for the following transformation.



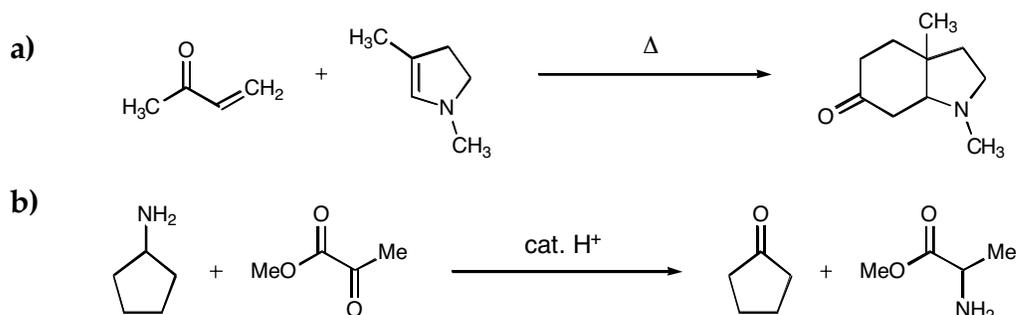
4. Please provide syntheses of the indicated compounds from the starting materials in the box **without using LDA**.



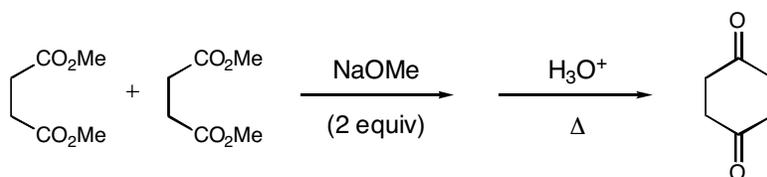
5. The following aromatization can take place under basic or acidic conditions. Using what you know about dehydration reactions, provide a detailed mechanism for each transformation.



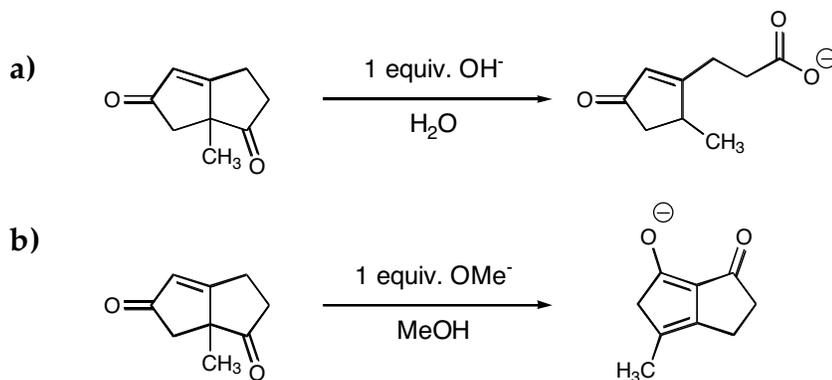
6. Enamines and iminium ions exhibit reactivity similar to enols and carbonyls. Keeping this in mind, please provide detailed mechanisms for the following transformations.



7. Please provide a detailed mechanism for the following transformation.



8. Please provide a detailed mechanism for each of following transformations. Briefly explain why different products are observed under the different reaction conditions.



9. Please provide a detailed mechanism for the following transformation. It looks tricky, but you know all of the steps!

