

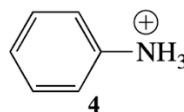
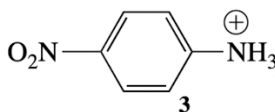
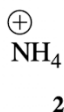
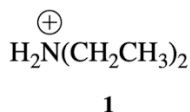
Final Review

Apply to be a peer tutor! :

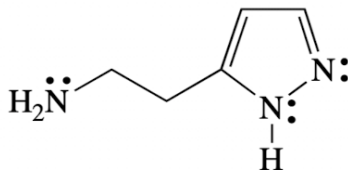
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Chapter 23

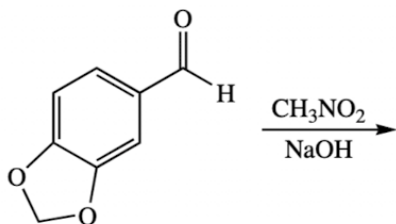
1. What is the most and least acidic ammonium ion?



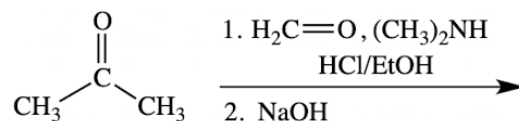
2. The following structure is histamine. Rank the three nitrogens in order of decreasing basicity by putting a number next to each (1=most basic)



3. Draw the mechanism and product for the following Henry Reaction.

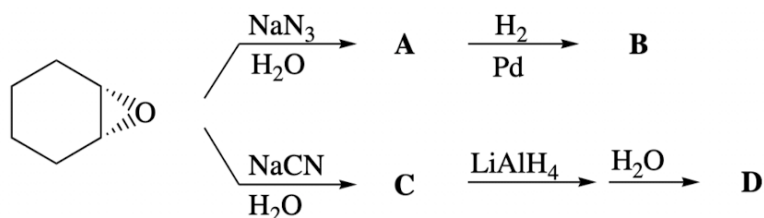


4. Draw the mechanism and product for the following Mannich Reaction.

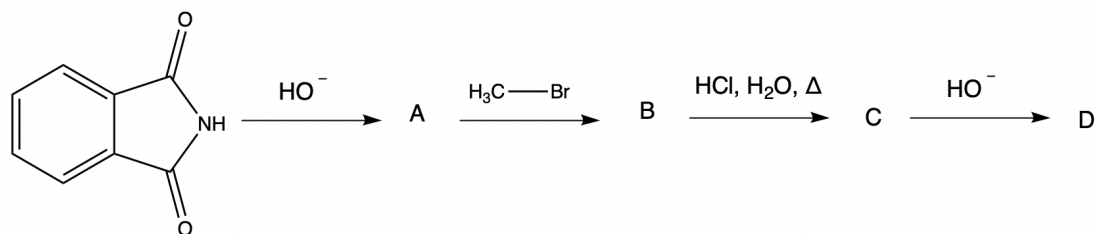


5. Draw the products for the following reactions

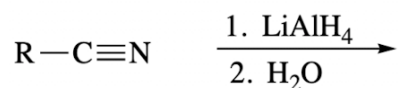
a.



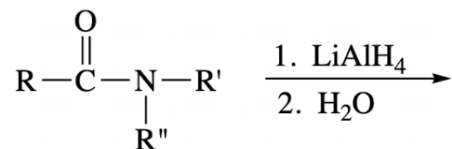
b. Gabriel synthesis



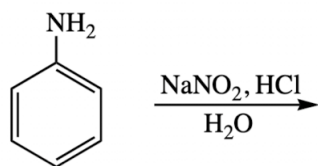
c. Reduction of a nitrile



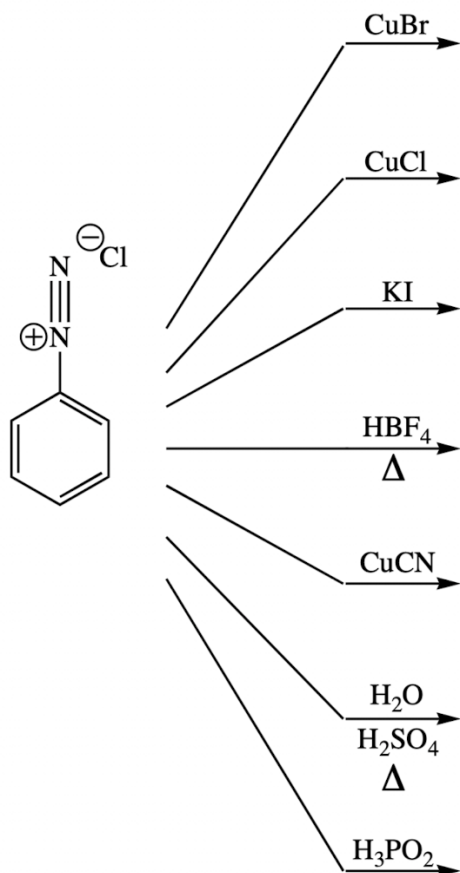
d. Reduction of an amide



e.

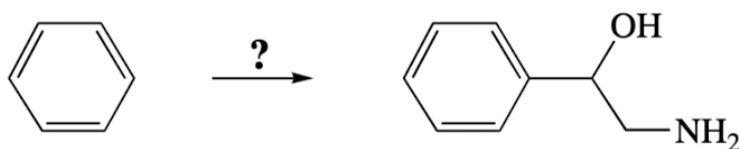


f.

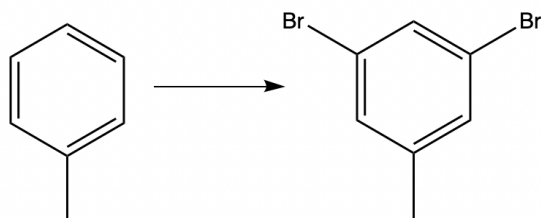


6. Provide the reagents for the following synthesis reactions. (Includes review from ch. 16 and 17)

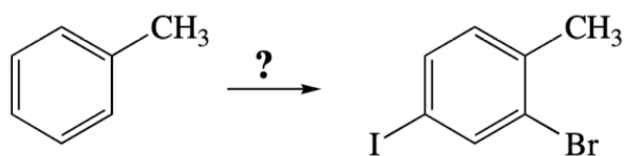
a.



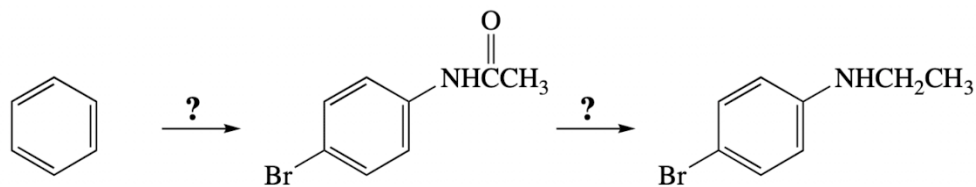
b.



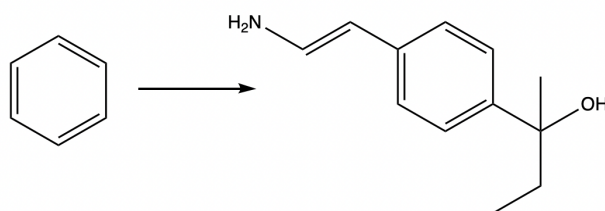
c.



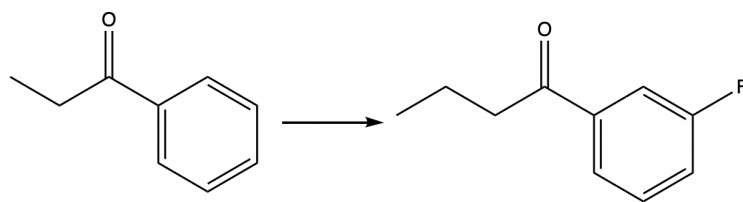
d.



e.



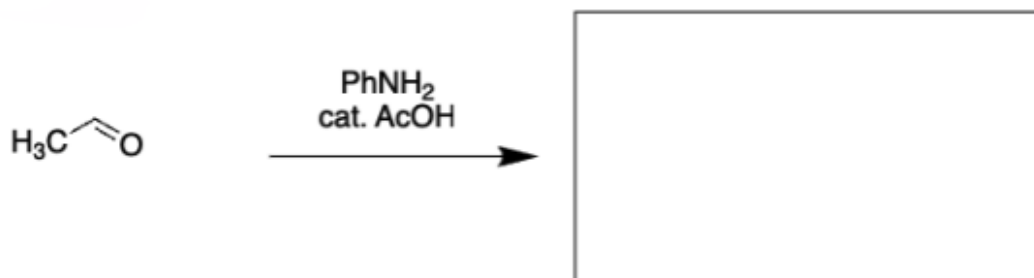
f.



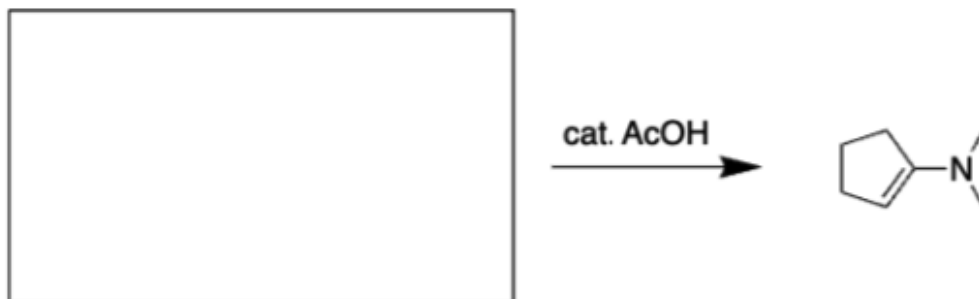
Review (Ch. 18/19/20)

1. Fill in the boxes with the appropriate product, starting material, or reagent.

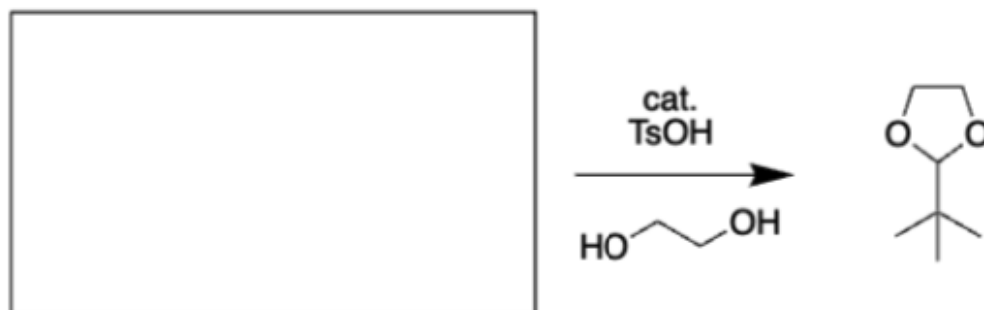
a.



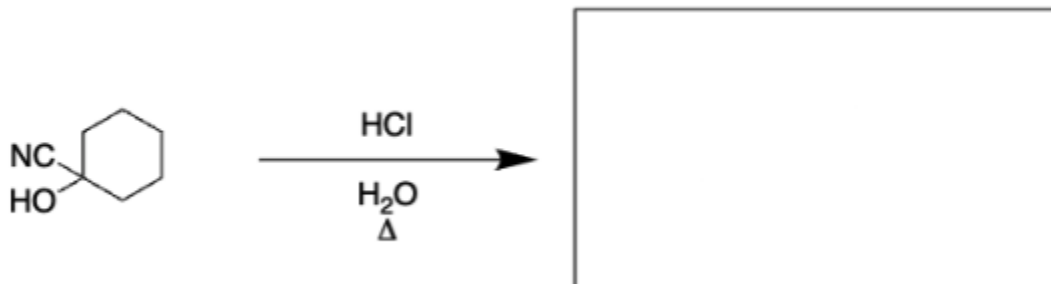
b.



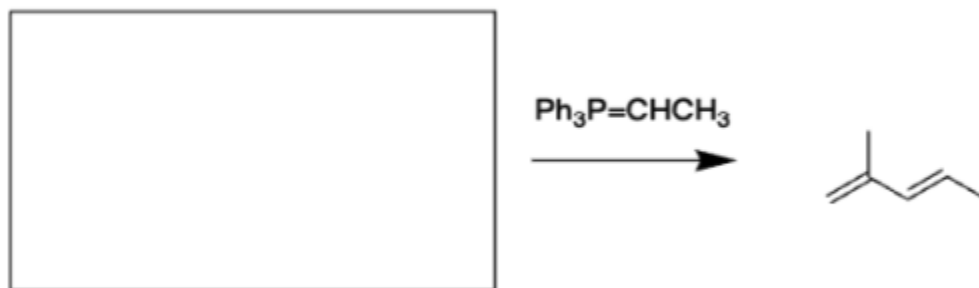
c.



d.



e.



2. Complete the multistep synthesis.

a.



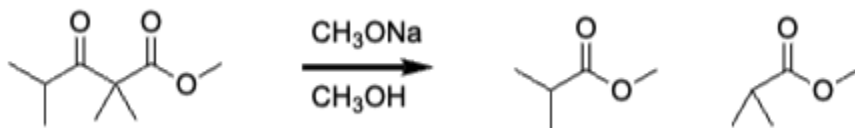
b.



c.

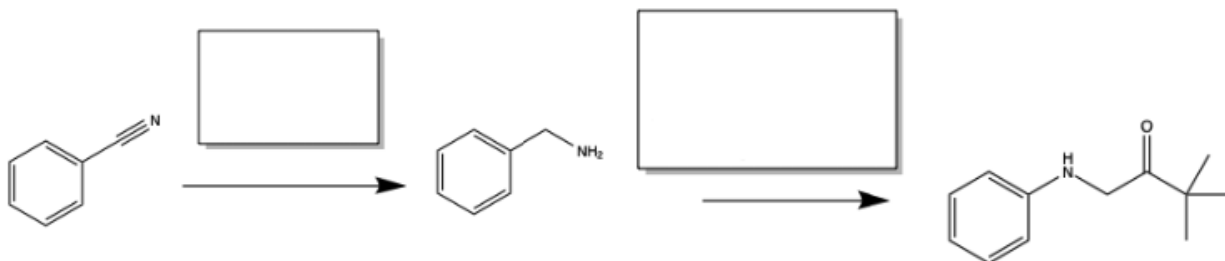


3. Suggest a plausible arrow-pushing mechanism for the following reaction.

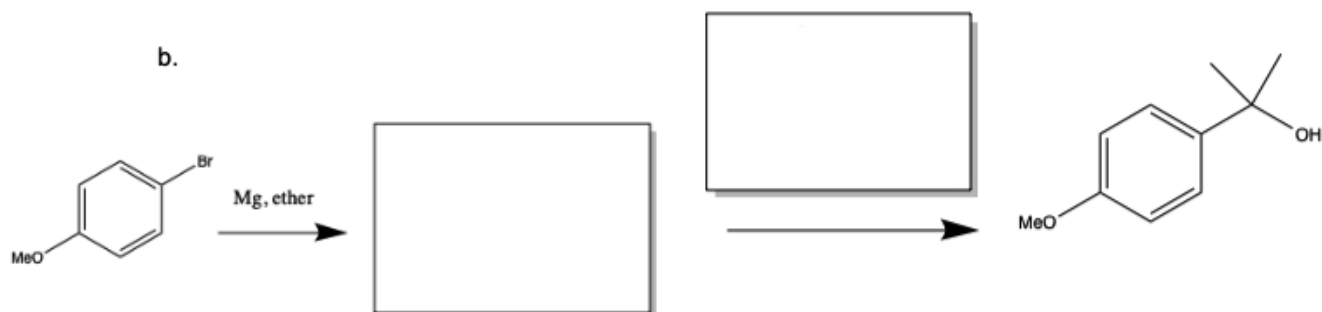


4. Fill in the boxes with the appropriate product, starting material, or reagent.

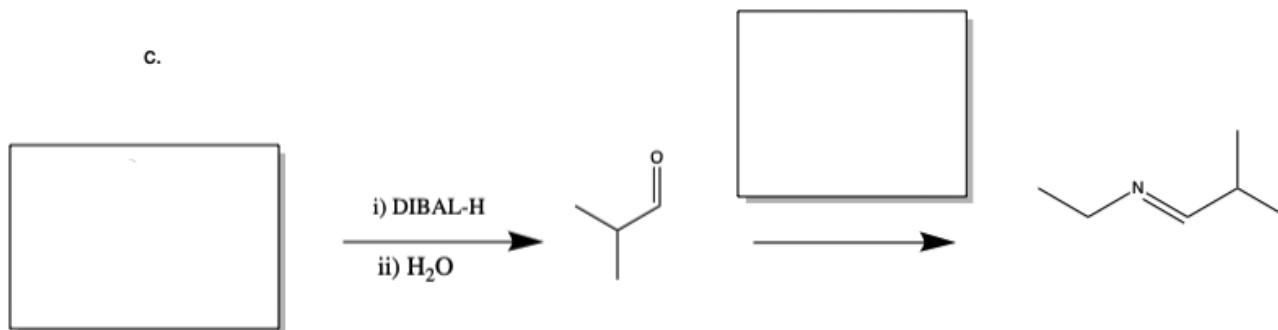
a.



b.

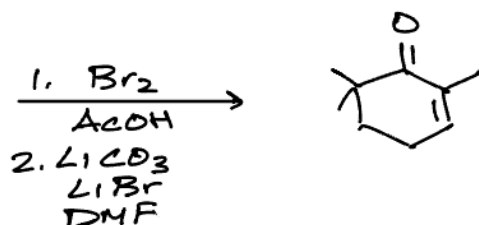


c.

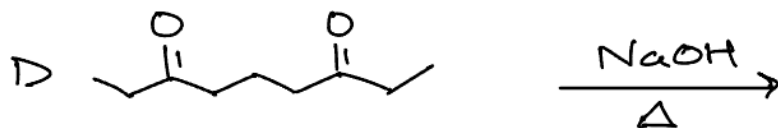
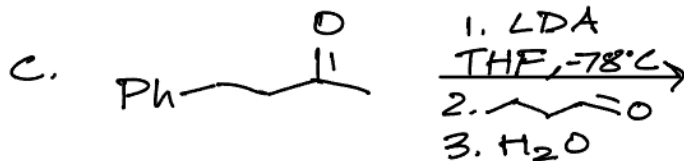
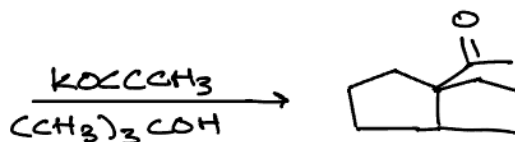


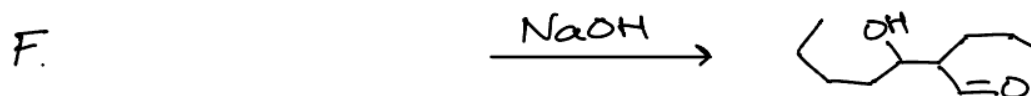
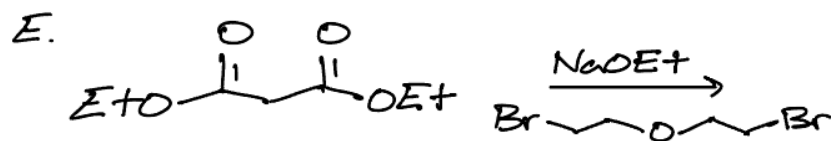
1. Determine the starting material or product for each of the following reactions

A.

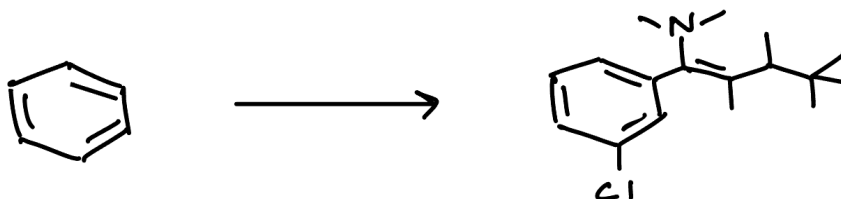


B

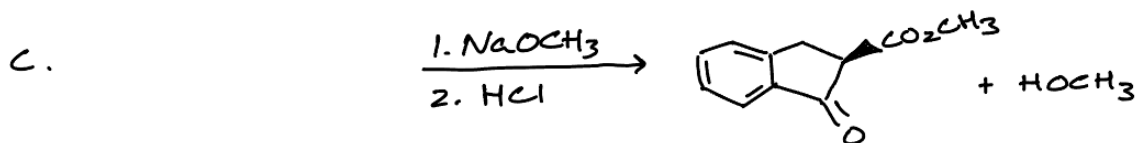
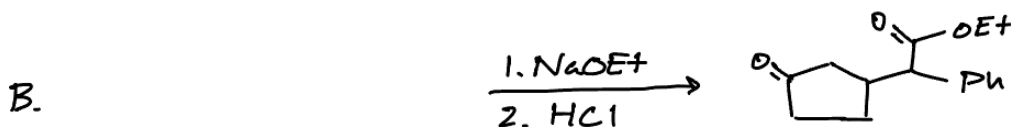
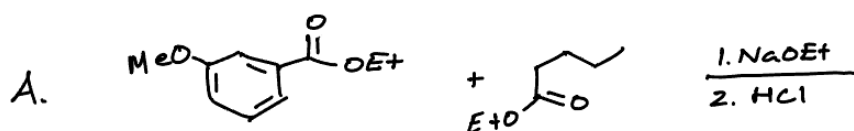




2. Determine the reagents needed for the following synthesis reaction



3. Determine the starting material or major product for each of the following reactions



4. Determine the reagents needed for the following synthesis reaction

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