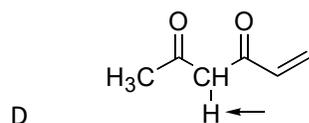
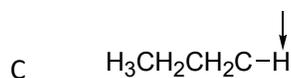
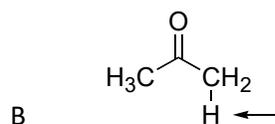
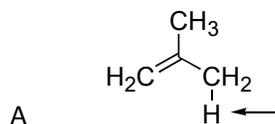


Extra Problems

1. a) For each of the following compounds abstract the hydrogen indicated to obtain the conjugate base. Once the hydrogen is abstracted for each compound, draw all the resonance structures available to the conjugate base. If no resonance is available to the conjugate base then write NO RESONANCE.

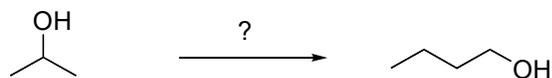


b. Considering your answer to part a, rank the acidities of the compounds above by placing the appropriate letter (A, B, C, D) in the order below.

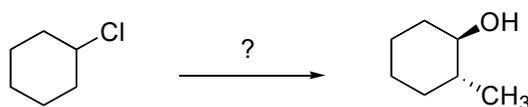
Acidity: _____ > _____ > _____ > _____
 Most acidic least acidic

2) Indicate how to synthesize the products shown using the given starting material. You may use any other reagents that you desire in as many steps as necessary.

a.

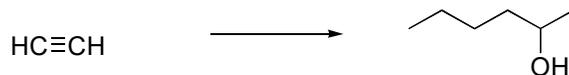


b.



3) Propose a method to synthesize the product shown with the indicated starting material. You may use any inorganic reagent you desire and any organic compound which contains four carbons or less.

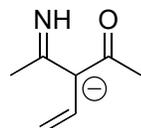
a.



b.

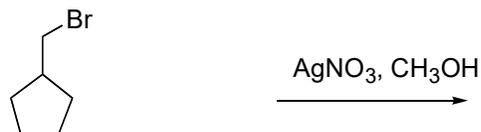


4) Draw the resonance forms of the molecule shown. In addition, of the resonance forms drawn indicate which resonance form is the most stable and which is the least stable.



5) Indicate the preferred products for the following reactions.

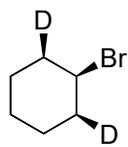
a.



b.



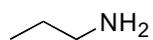
c.



NaCN



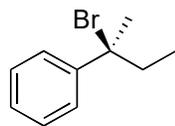
d.



CH₃I (excess)



e.

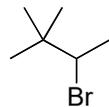


CH₃OH



Δ

f.

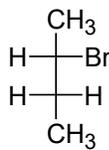


CH₃OH



Δ

g.

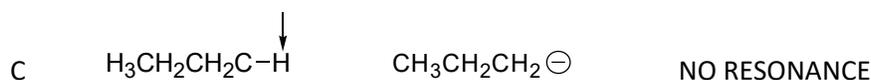
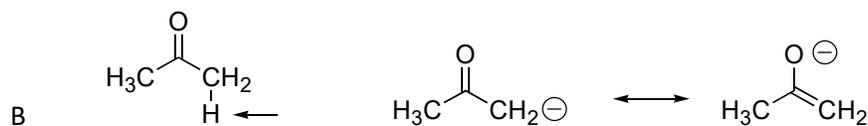
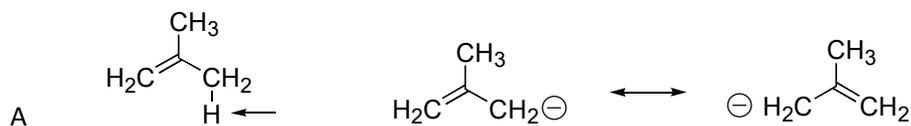


CH₃SNa



Keys

1. a) For each of the following compounds abstract the hydrogen indicated to obtain the conjugate base. Once the hydrogen is abstracted for each compound, draw all the resonance structures available to the conjugate base. If no resonance is available to the conjugate base then write NO RESONANCE.

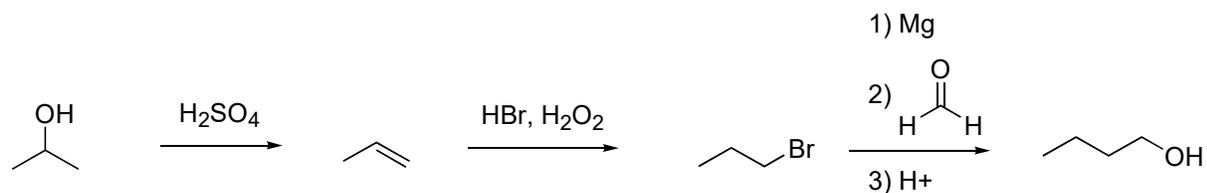
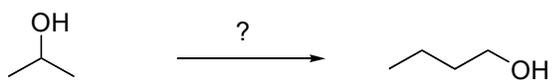


b. Considering your answer to part a, rank the acidities of the compounds above by placing the appropriate letter (A,B,C,D) in the order below.

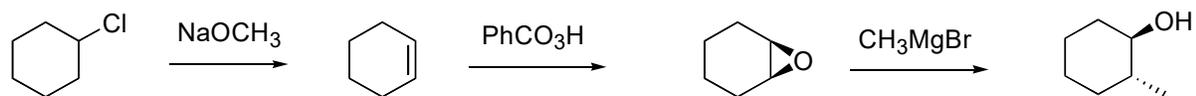
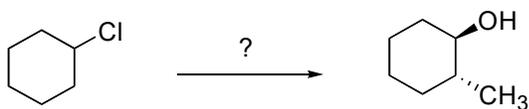
Acidity: D > B > A > C
 Most acidic least acidic

2) Indicate how to synthesize the products shown using the given starting material. You may use any other reagents that you desire in as many steps as necessary.

a.

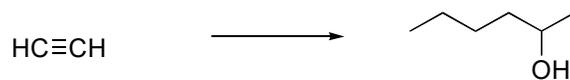


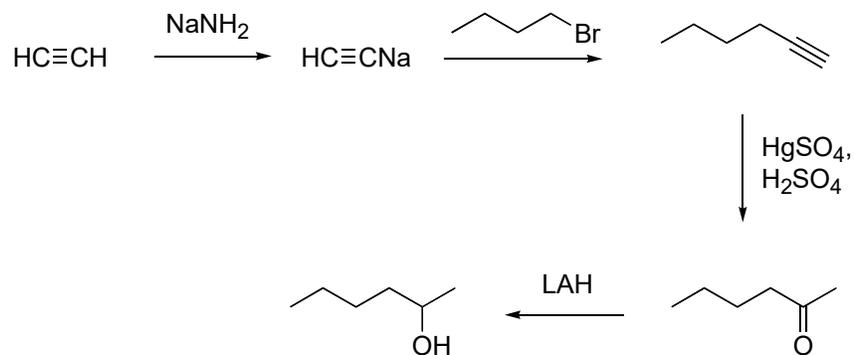
b.



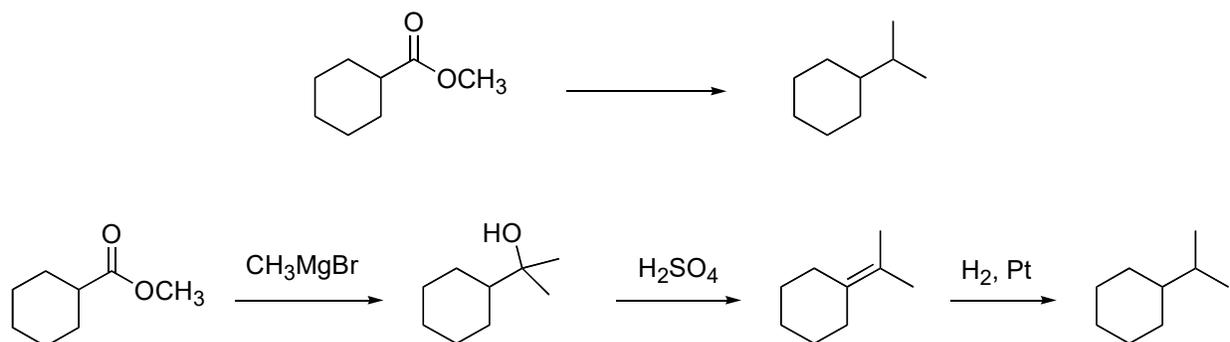
3) Propose a method to synthesize the product shown with the indicated starting material. You may use any inorganic reagent you desire and any organic compound which contains four carbons or less.

a.

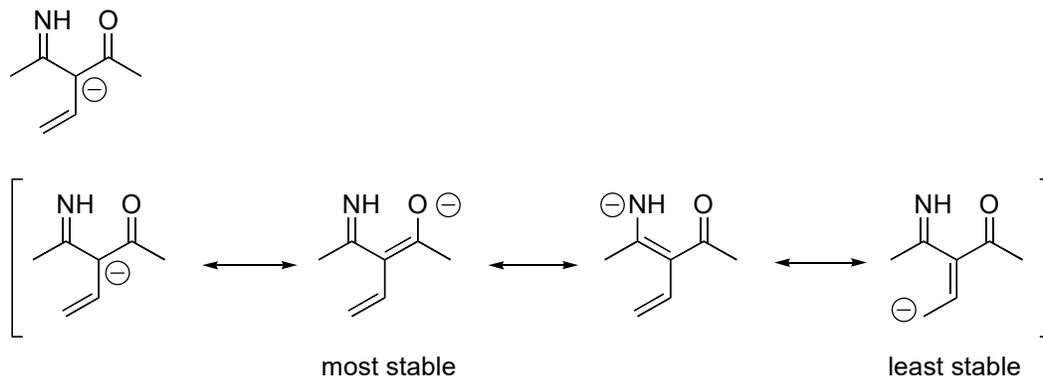




b.



4) Draw the resonance forms of the molecule shown. In addition, of the resonance forms drawn indicate which resonance form is the most stable and which is the least stable.

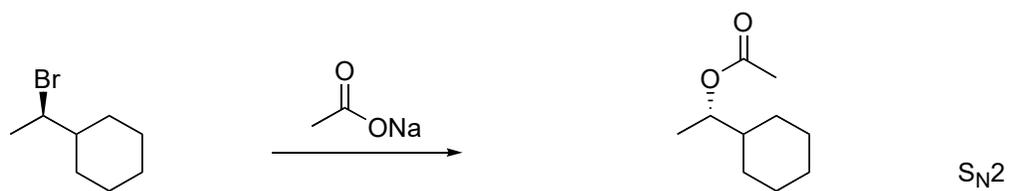


5) Indicate the preferred products for the following reactions.

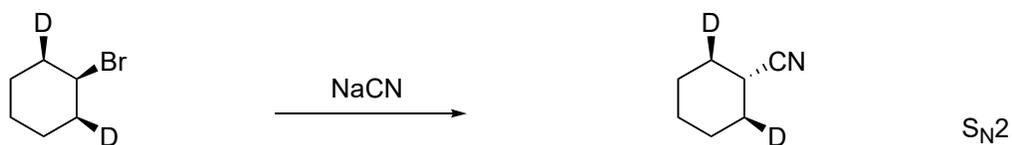
a.



b.



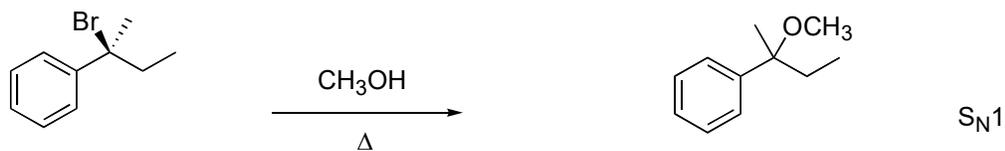
c.



d.



e.



f.



g.

