

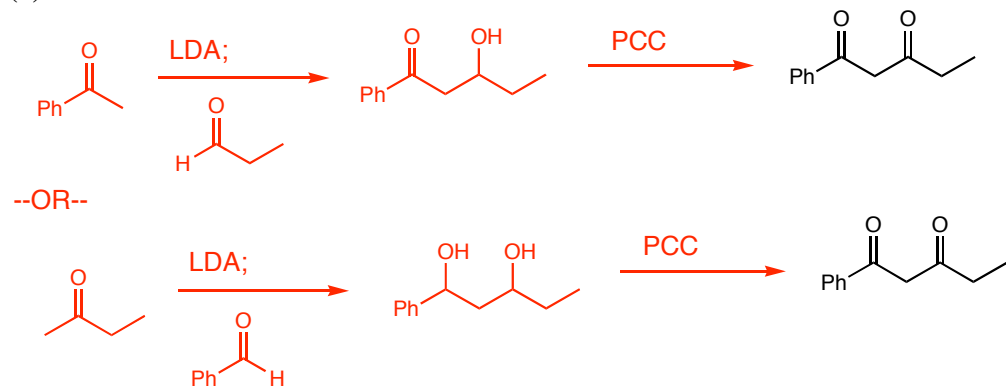
Chem. 218 Problem Set 12

Recommended problems from the book: Any or all of the problems in Ch. 24

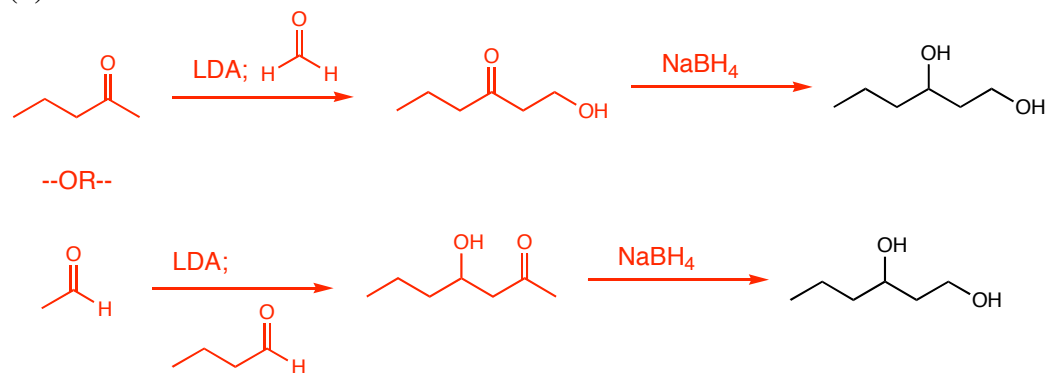
I highly recommend doing the problems in Ch. 24, especially those that cover topics you do not understand well.

1. Each of the following molecules can be synthesized using an aldol reaction (other steps may also be necessary). Show how.

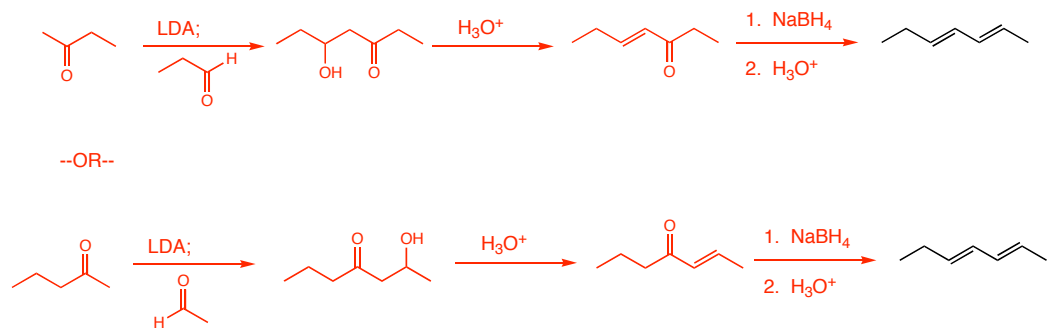
(a)



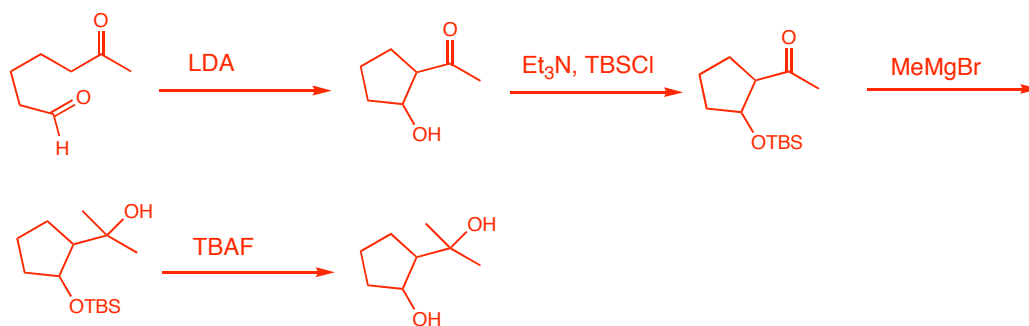
(b)



(c)

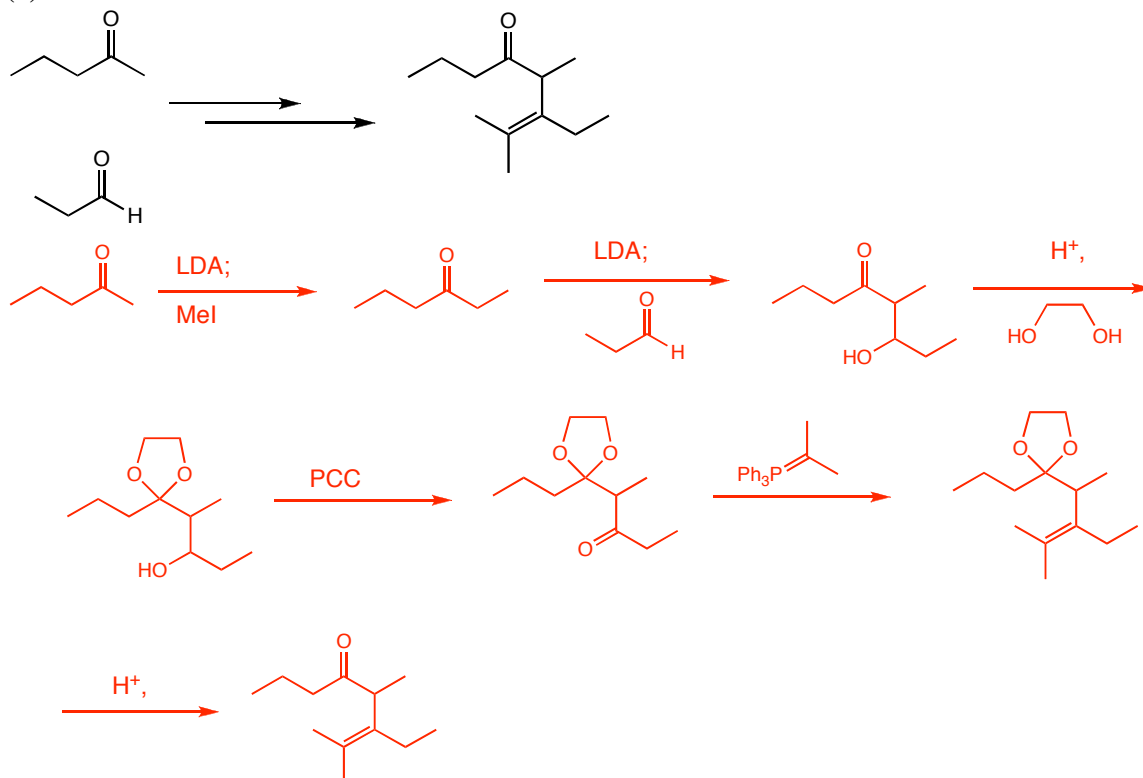


(d)

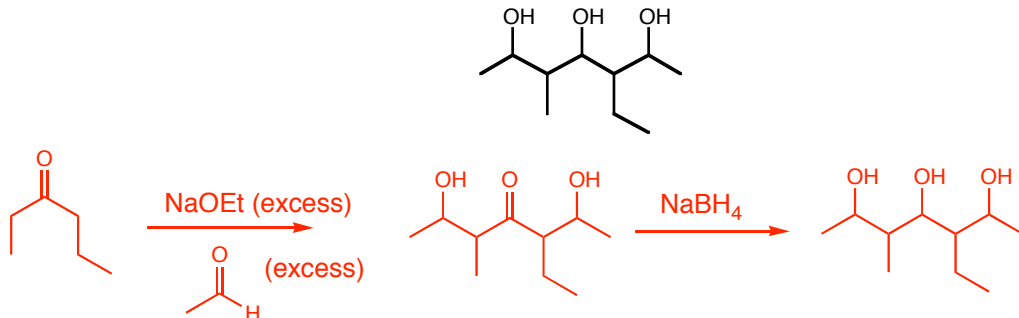


2. Propose a synthesis of the target molecules below, given the starting materials on the left and any other inorganic reagent.

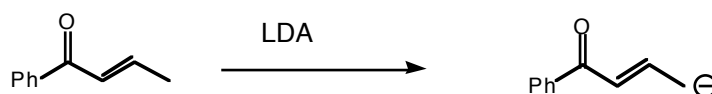
(a)



5. Propose a synthesis of the following molecule, starting from acetaldehyde and using two aldol reactions.

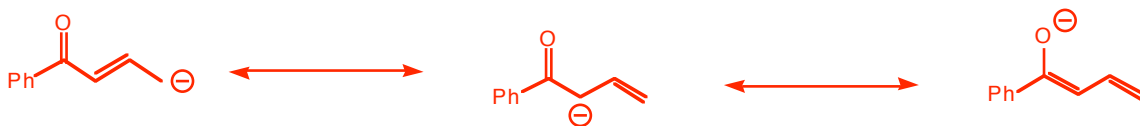


6. Base treatment of α,β -unsaturated carbonyls results in deprotonation of the γ proton.



a. Explain why this proton is acidic.

The following resonance structures can be drawn of the carbanion. Since the negative charge is spread out over so many atoms, and can reside on the electronegative oxygen atom, the carbanion is stabilized, and thus the conjugate acid is more acidic.



b. Draw all possible enolates of the following molecule:

