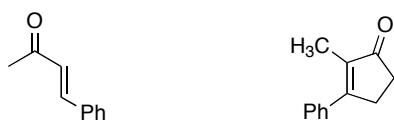
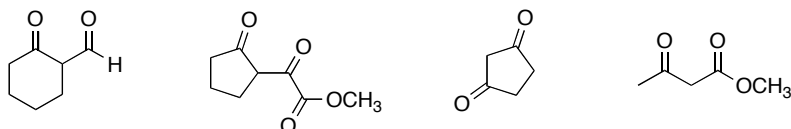


Chem 2062 Spring 2006
Chapter 22 group work

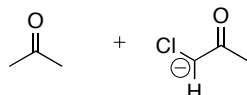
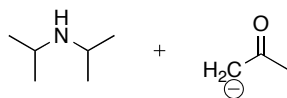
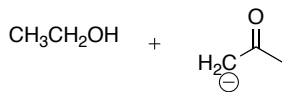
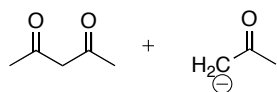
1. Deconstruct the following compounds retrosynthetically to show how they could be formed using aldol condensations. Then draw the forward synthetic reactions. If they are crossed aldol condensations, show the order of addition required to get a good yield. Choose one of the bottom two and draw the full mechanism.



2. Deconstruct the following compounds retrosynthetically to show how they could be formed using Claisen condensations. Then draw the forward synthetic reactions. If they are crossed Claisen condensations, show the order of addition required to get a good yield. Choose one of the reactions and draw the full mechanism.

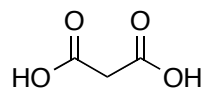


3. For the following pairs of compounds, predict the most likely products of an acid/base reaction between the two compounds, and indicate the direction of the equilibrium. Briefly explain your choices.



4. Malonic acid shows an interesting reaction when it is heated with acid catalyst. In a mechanism similar to the McLafferty rearrangement, one carbonyl attacks the OH hydrogen of the other carboxylic acid group. The result is ejection of CO_2 leaving an enol which tautomerizes to acetic acid. This process is called decarboxylation.

This important mechanism will be used in a few of our remaining syntheses. Draw its mechanism.



malonic acid