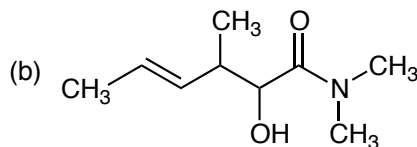
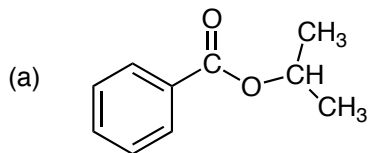
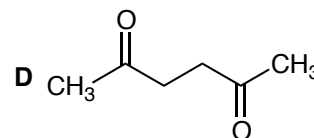
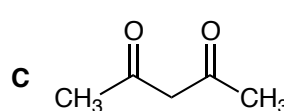
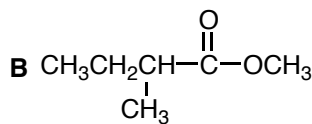
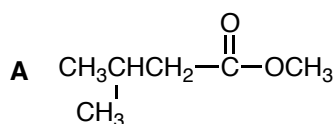


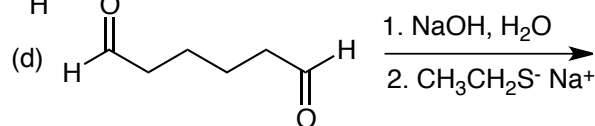
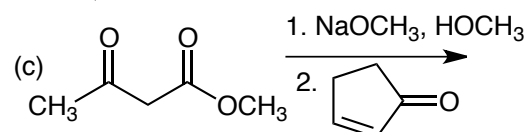
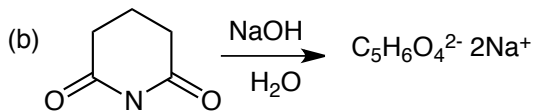
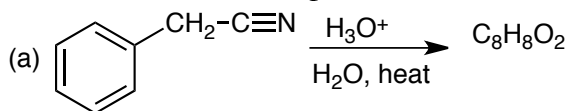
1. Name the following compounds. (10 pts)



2. (a) Look at molecules **A** and **B**. One molecule could undergo a Claisen condensation in good while the other would give only a low yield. Explain briefly, showing the reaction that occurs for the molecule you choose. (b) Look at molecules **C** and **D**. Which molecule would have the greater concentration of enol in acidic conditions? Explain briefly, showing the enolization reaction for the molecule you choose. (20 pts)

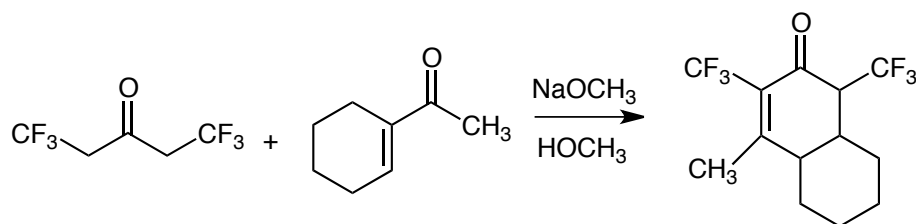


3. Give the product of the following reactions and in each case show the complete reaction mechanism by which it is formed. (40 pts)



3. (i) NaOH (ii) H₃O⁺ (iii) heat

4. Show how the following reaction occurs, giving all steps of the mechanism. No other reagents are needed except those given. (10 pts)



5. Synthesize **TWO** of the molecules shown on the right from the starting materials given on the left. Do all three for extra credit. (20 pts).

