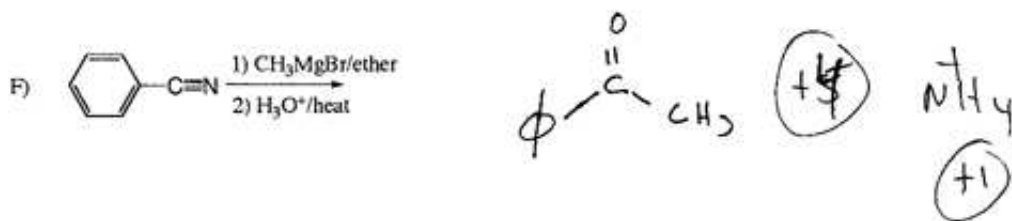
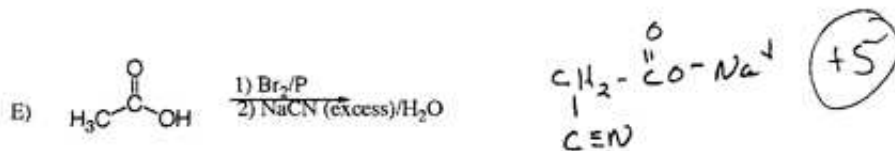
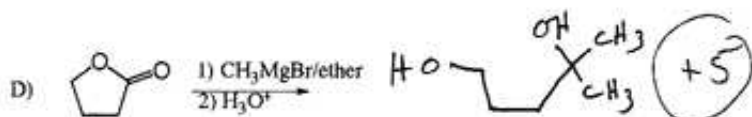
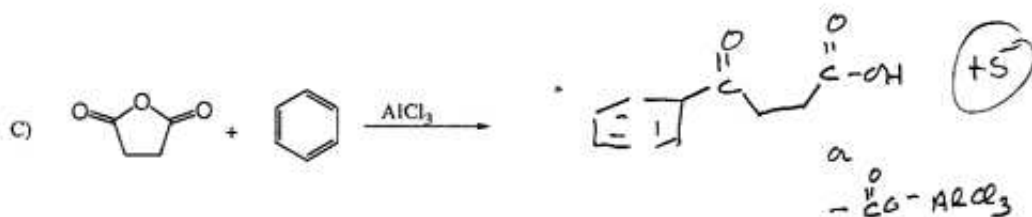
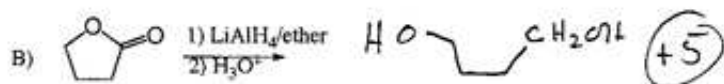
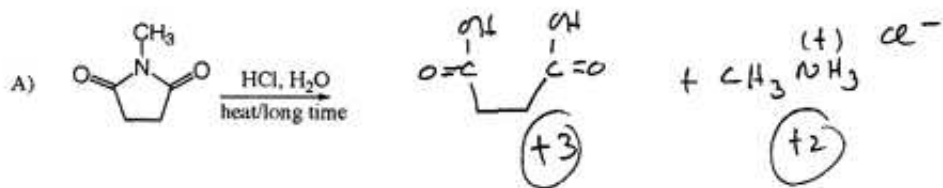
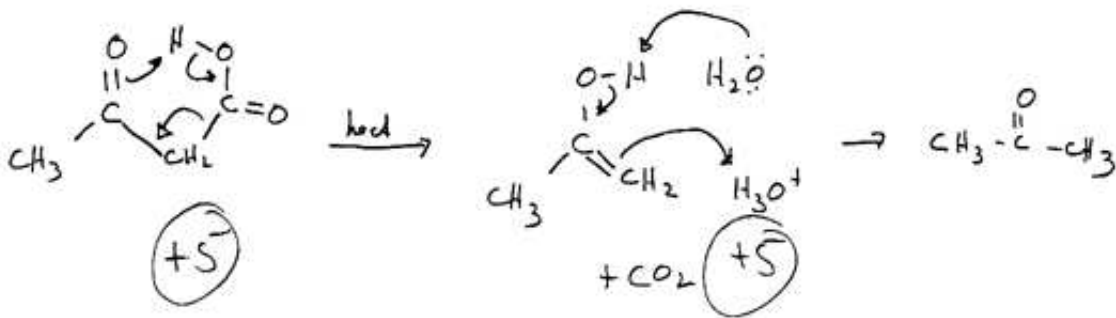
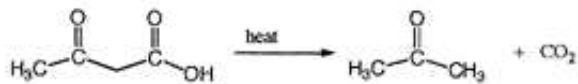


if wrong state of H⁺ -1

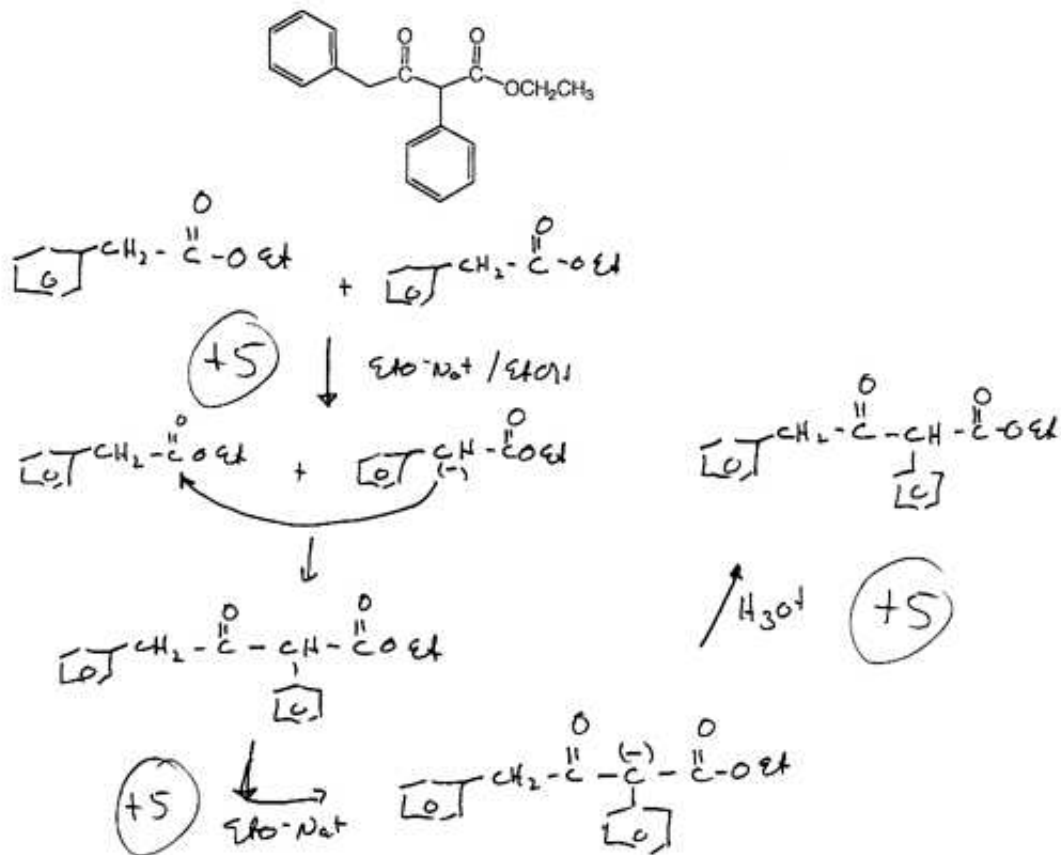
Problem 1 (30 points) Given the final products for the following reactions. Be sure your products are in the correct state of protonation.



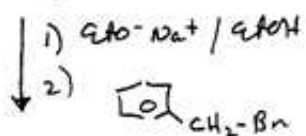
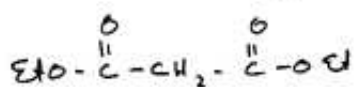
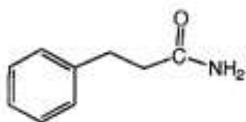
Problem 2. (10 points) Give the mechanism for the following reaction.



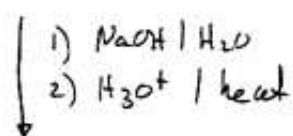
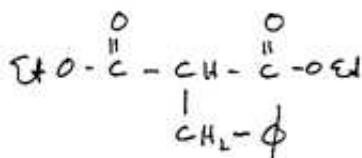
Problem 3 (15 points) How would you synthesize the following compound using the Claisen Condensation? Show each intermediate along the reaction pathway.



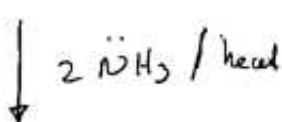
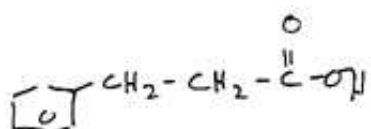
Problem 6. (20 points) Starting with diethylmalonate and any other organic compounds, use the malonic ester synthesis and any other chemical transformations to form the following compound.



(+10)



(+5)



(+5)

