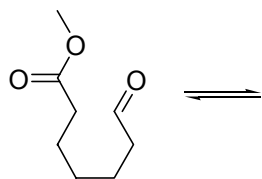
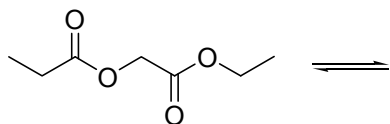
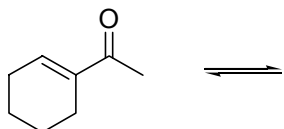


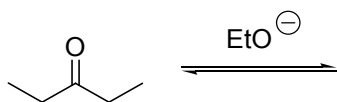
Problems in Bifunctional Chemistry

You must make sure you complete the work book problems (module 06524 / 06013) as the course progresses. The first few questions are in the same style as the work book, but later questions are harder and the problems may involve one *or more* consecutive steps (but still using reactions such as the aldol, Claisen/Dieckmann, conjugate addition etc that have been covered).

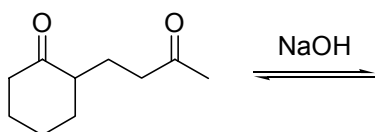
- 1 Draw all possible **ENOLS** for the following molecules. Consider "mono" enols only. If more than one enol is possible, which is the more/most stable and why?



- 2 Draw a mechanism for the **FORMATION OF AN ENOLATE** from the following compound.

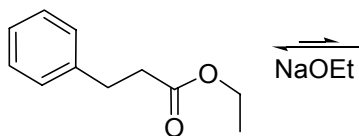


- 3 Draw a mechanism for the following **ALDOL REACTION**.

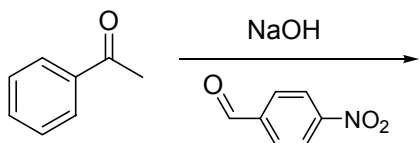


hint: 1,5-dicarbonyl...cyclisation

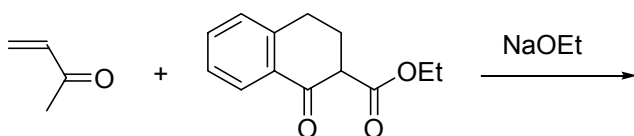
- 4 Draw a mechanism for the following **CLAISEN CONDENSATION**.



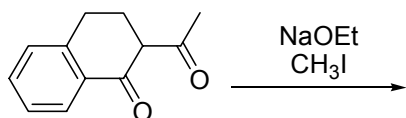
5 Draw a mechanism for the following **CROSSED CONDENSATION**.



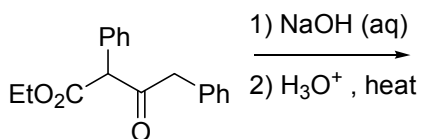
6 Draw a mechanism for the following **CONJUGATE ADDITION**.



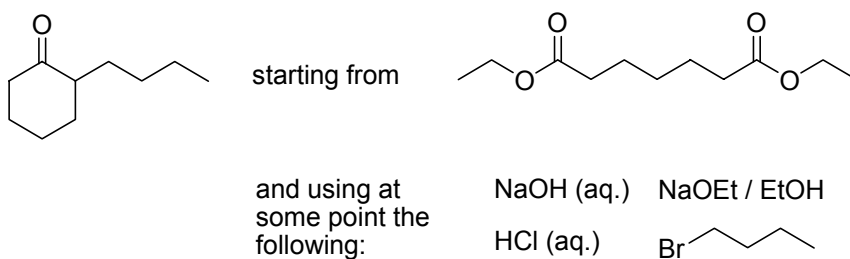
7 Draw a mechanism for the following **ALKYLATION REACTION**.



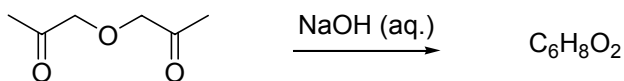
8 **DECARBOXYLATION**: Work out the products for the following reaction, identifying any key intermediates in the sequence.



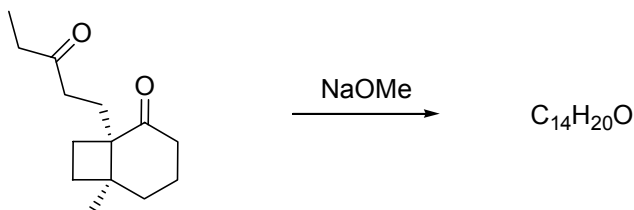
9 Devise a synthesis of the following molecule starting from the compound given, also using the reagents and reactants provided. Hint: do the the previous problem first!



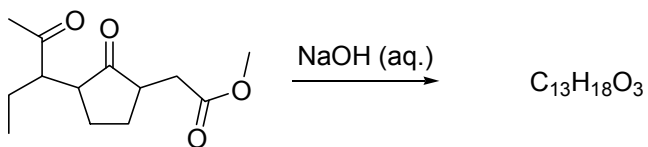
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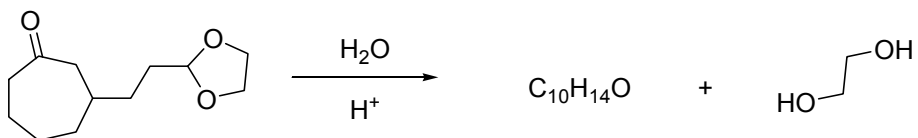
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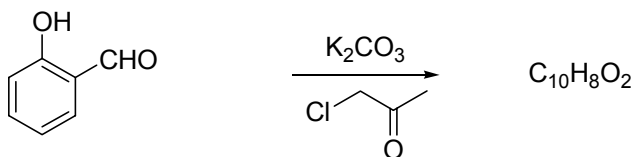
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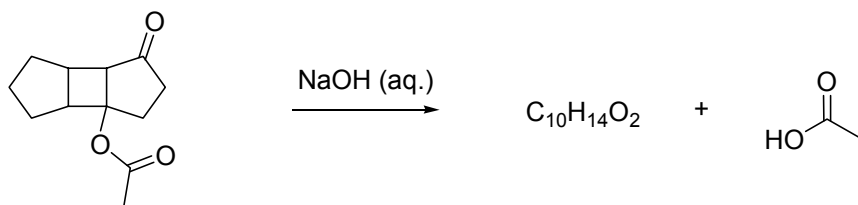
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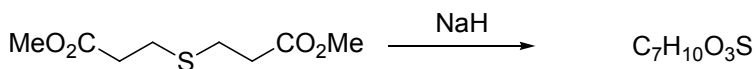
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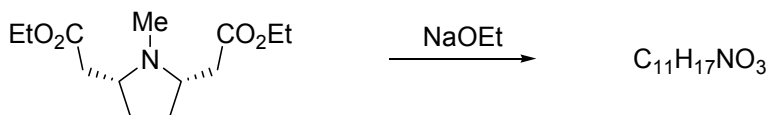
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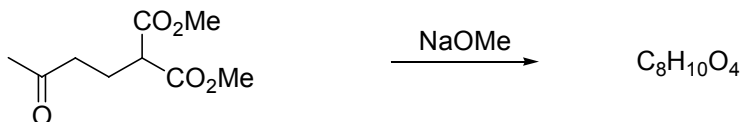
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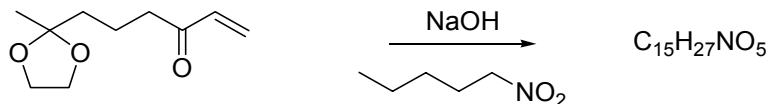
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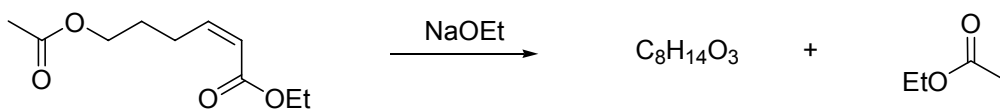
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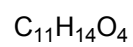
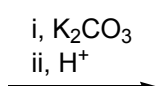
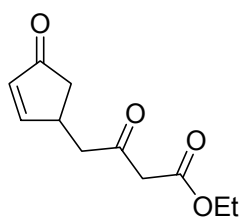
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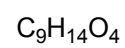
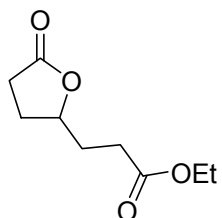
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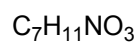
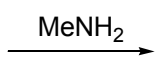
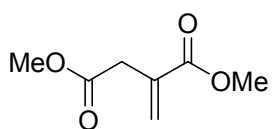
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