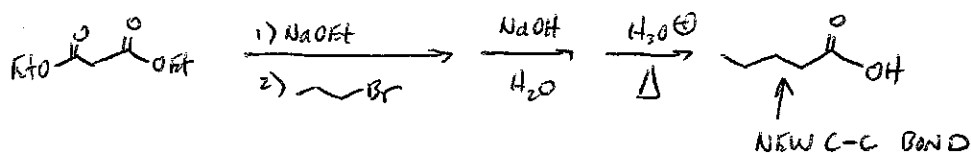
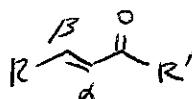


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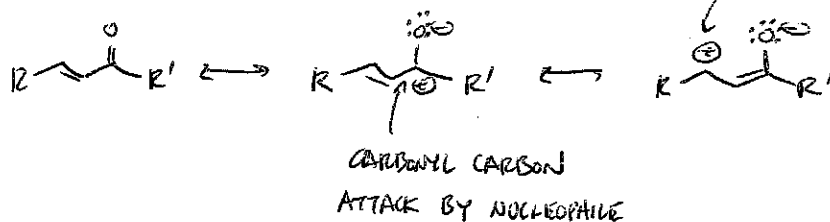
REACTION: α ADDITION TO α -CARBONS OF $C=O$ COMPOUNDS



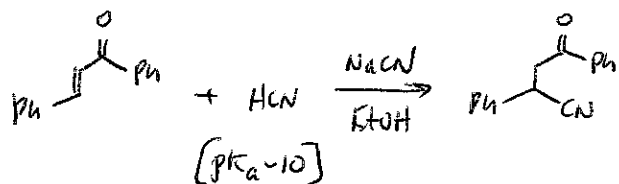
RENS OF α, β -UNSATURATED CARBONYL COMPOUNDS



MINOR, BUT IMPORTANT RESONANCE STRUCTURES

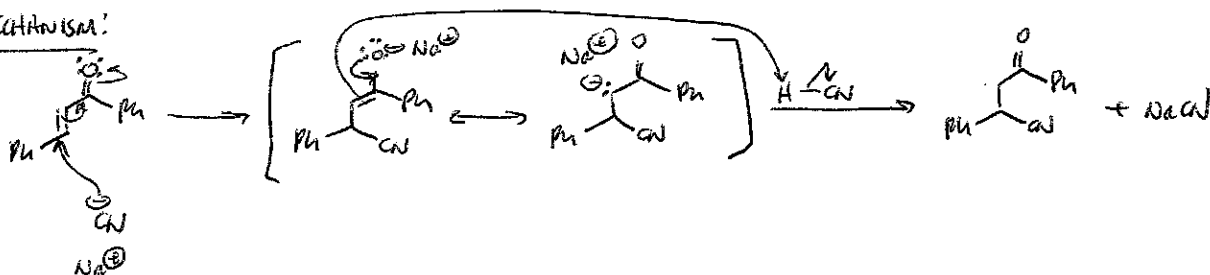


β -CARBON CAN ALSO UNDERGO
ATTACK



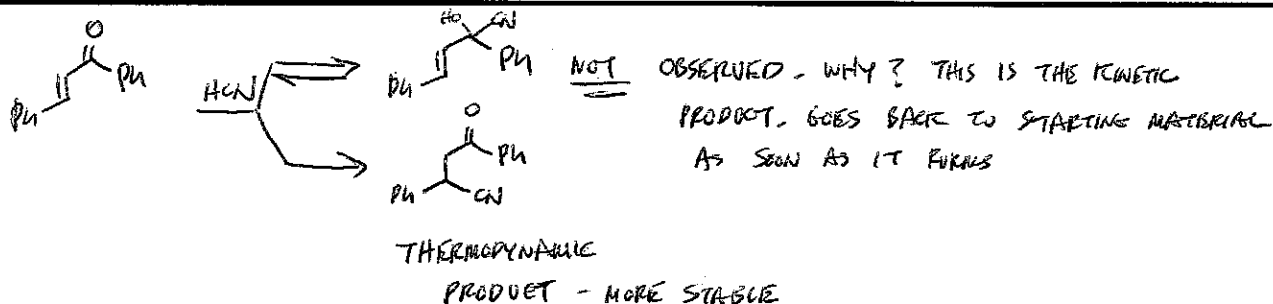
CONS. BASE IS WEAK - A REQUIREMENT FOR THESE REACTIONS

MECHANISM:



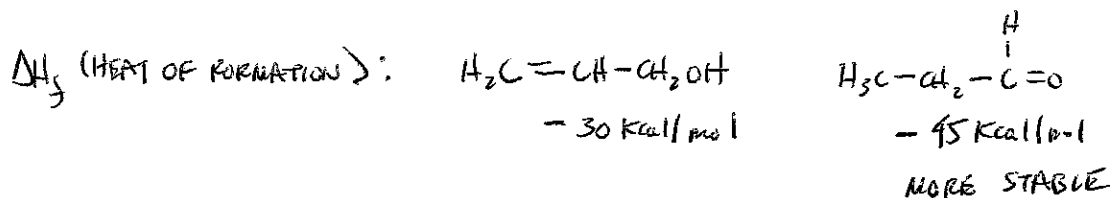
CONJUGATE ADDITION: REACTION WHERE THE NUCLEOPHILE ENDS UP ON THE β -CARBON

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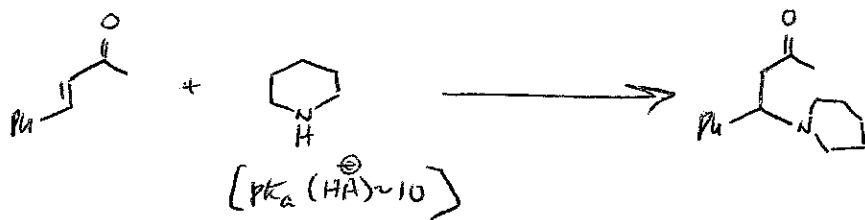
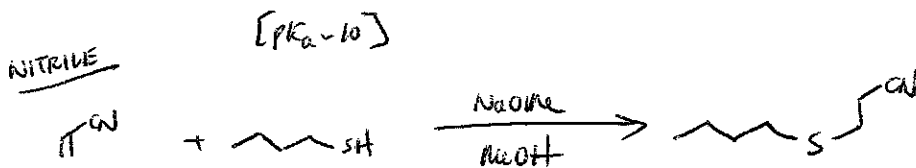
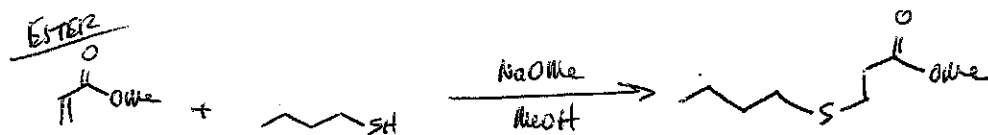


- HCN CAN ADD TO C=O TO GENERATE CYANOHYDRINS. HOWEVER, CONJUGATE ADDITION PRODUCT IS MORE STABLE

- THERMODYNAMIC DIFFERENCE - C=O IS MORE FAVORABLE THAN C=C



GENERAL TREND: WEAKLY BASIC NUCLEOPHILES TEND TO GIVE CONJUGATE ADDITION PRODUCTS WITH α, β -UNSATURATED CARBONYL COMPOUNDS



Course CHEM 345

Instructor BRUNN

Day WEDNESDAY

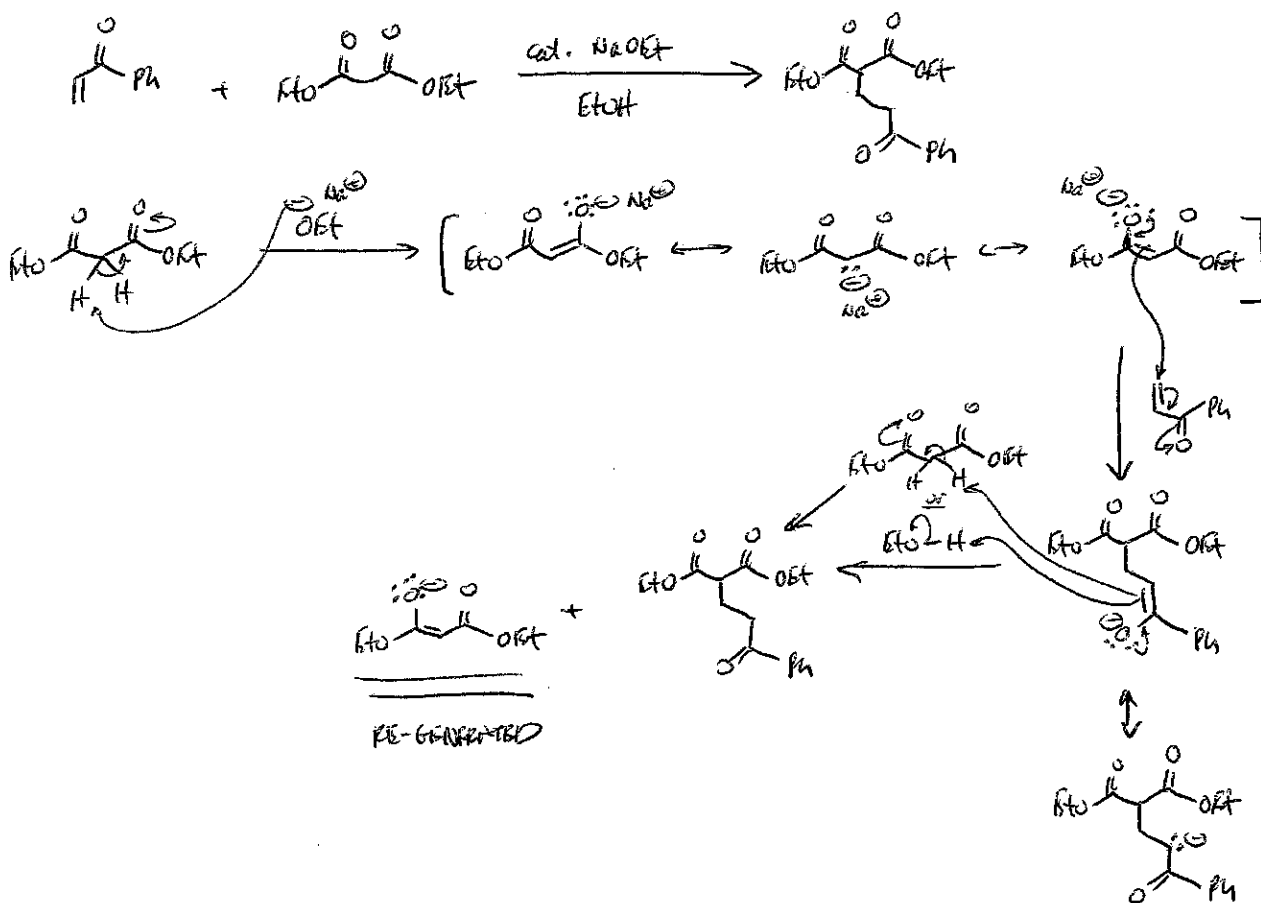
Date 4/16/2014

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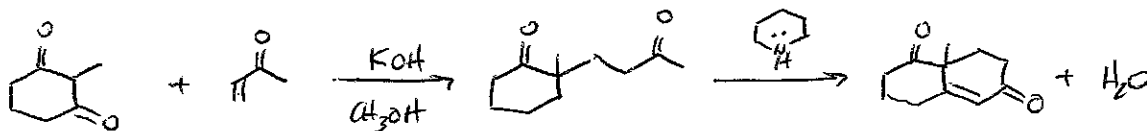
ONE OF THE MOST USED NUCLEOPHILES FOR CONJUGATE ADDITION
 ARE ENOLATES OF β -DICARBONYL COMPOUNDS



CONJUGATE ADDITION INVOLVING CARBON NUCLEOPHILE, MOST
 COMMONLY β -DICARBONYL \Rightarrow MICHAEL ADDITIONS

RING-FORMATION
 II

MICHAEL ADDITION FOLLOWED BY INTRAMOLECULAR ALDOL RXN = ROBINSON ANNULLATION



Course CHEM 345 Instructor GILLMAN
Day WEDNESDAY Date 4/16/2014
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