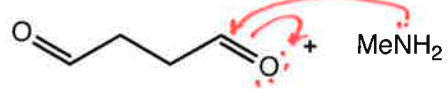
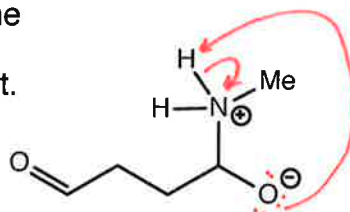


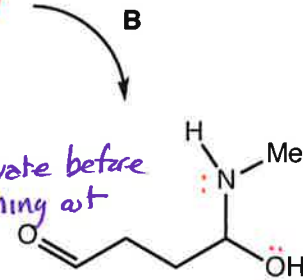
SQ 7b Add arrows and lone pairs, and provide the missing structures to complete the mechanisms. You may assume a small amount of H^+ is present.



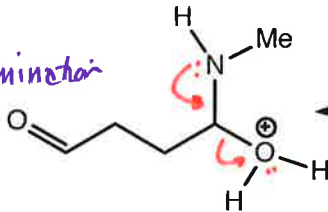
A
 $Ad_N C=O$



B



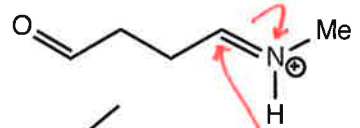
C
activate before pushing out



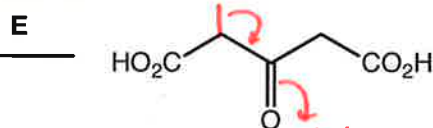
elimination

D

iminium ion: act like carbonyl

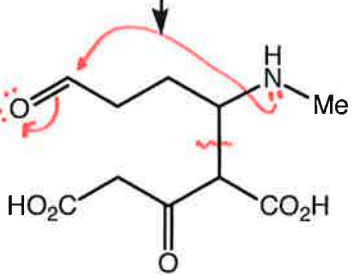
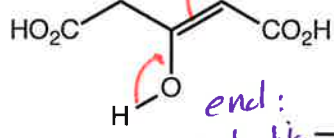


tautomerise

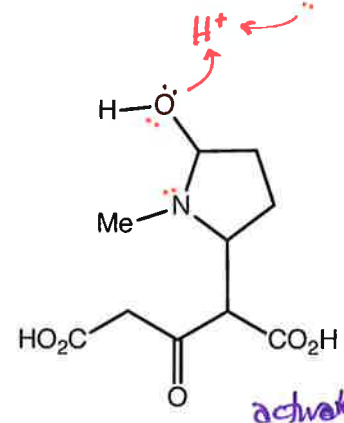
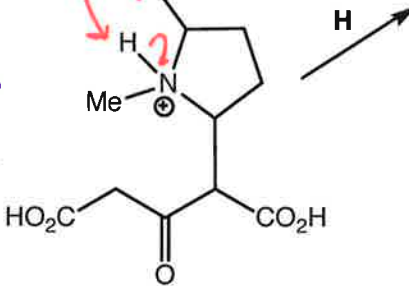


E

enol: acts like enolate

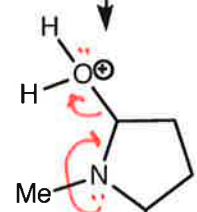


G
 $Ad_N C=O$

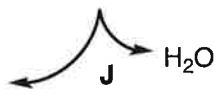
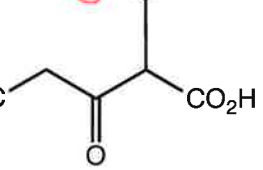


activate

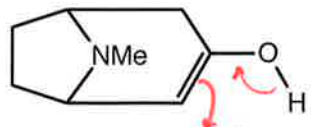
I



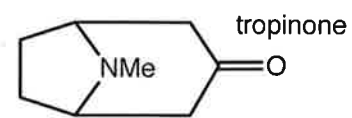
G → J like A → D



J



P
tautomerise



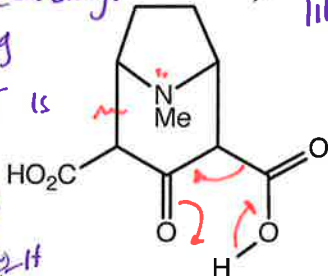
F & L:

nucleophilic addn to a carbonyl analog

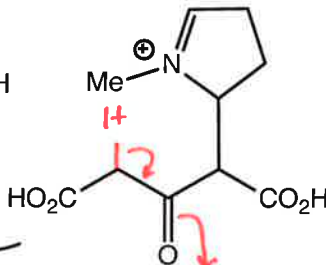
$C=N^+$ is an analog of $C=O$

L

like step F

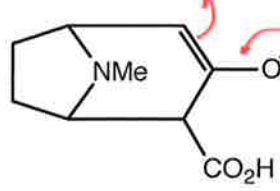


iminium ion

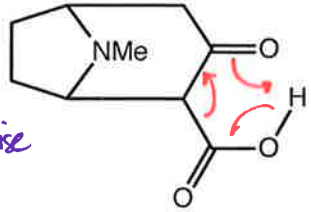


K
tautomerise

M
decarbonylation of β -keto acid



N
tautomerise



like step M

CO₂

CO₂