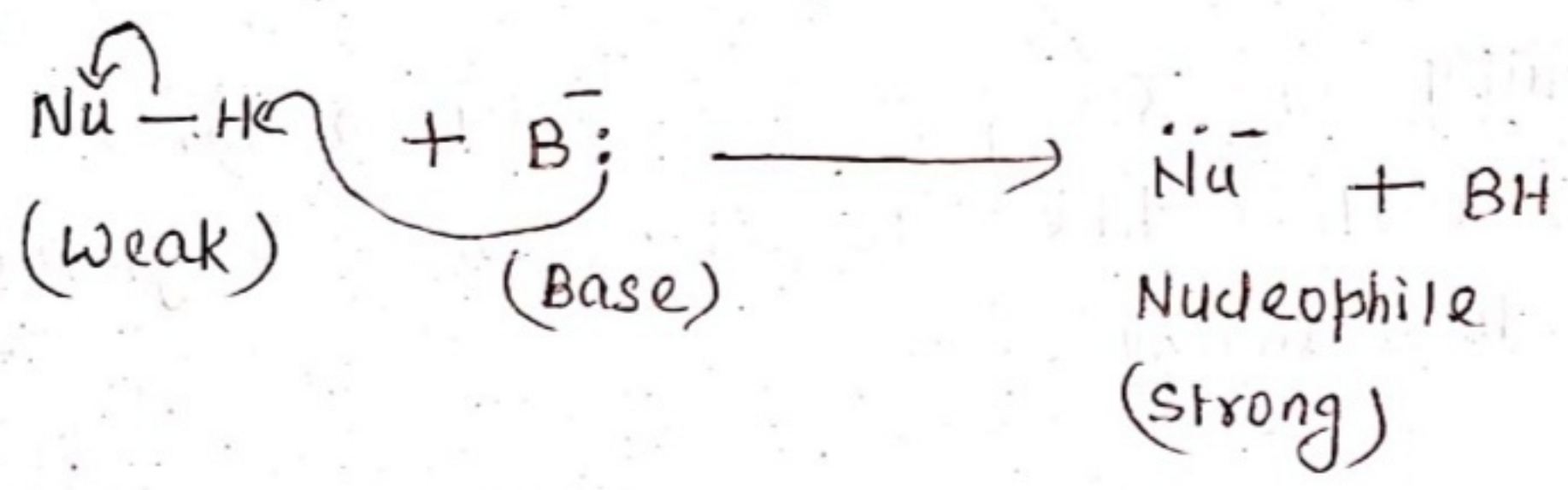


* The nucleophilic addition reactions of carbonyl compounds may be catalysed by acids or bases.

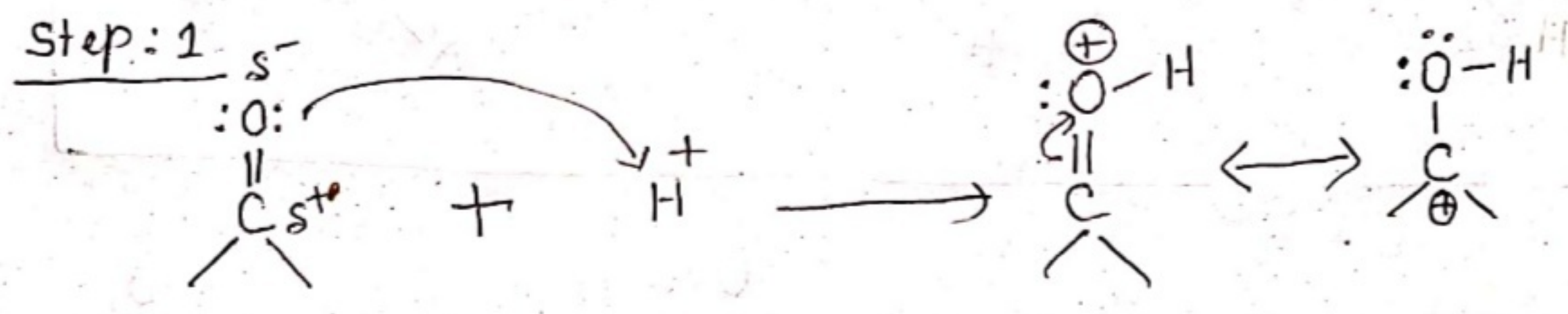
Base - Catalysed Addition

Nu-H
 Neutral Nucleophile (weak)

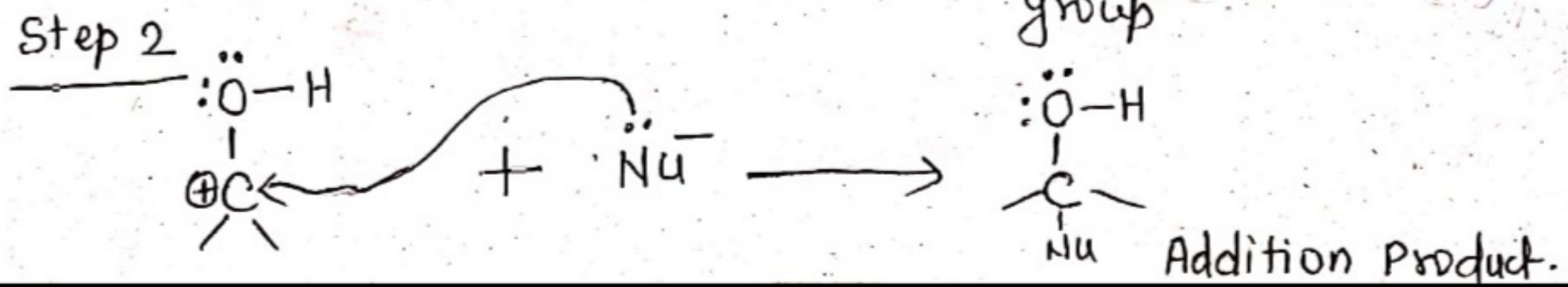
* Base convert a weak neutral nucleophile to a strong one by removing a proton.



* The acid catalysed nucleophilic addition occurs by the following mechanism:-----

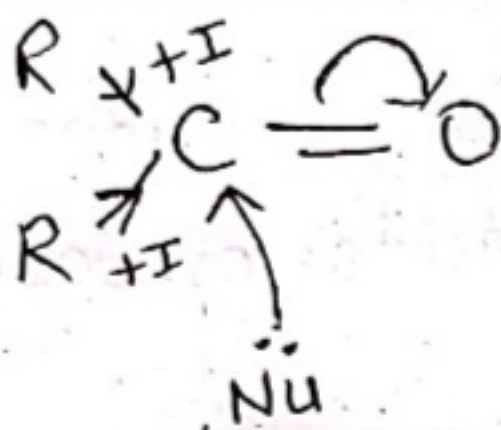
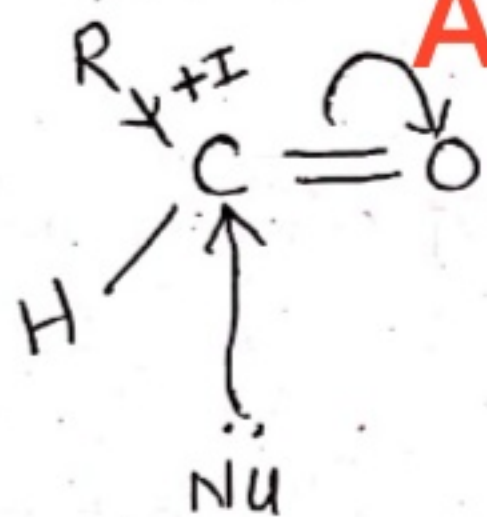


Protonated carbonyl group



Relative Reactivities Of Aldehydes and ketones

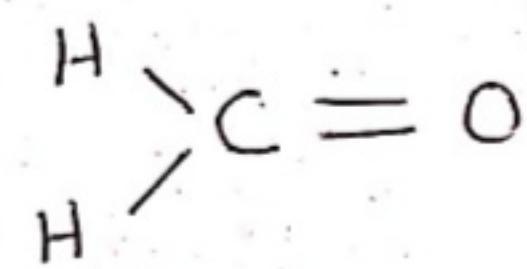
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By-Dr.Rinky
12-04-2020



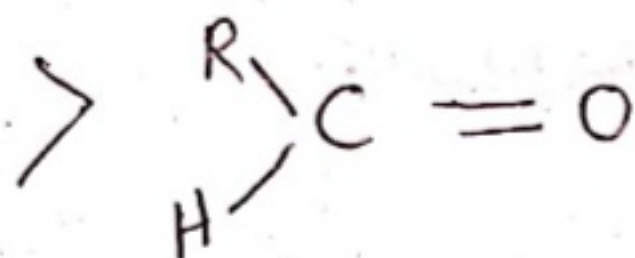
* Due to presence of two alkyl group on carbonyl carbon of ketone, electron density on carbon increases and hence less reactive towards nucleophile than aldehyde.

* Due to Bulky alkyl group (steric hindrance), Nucleophile is less likely to attack on carbonyl carbon of ketone than aldehyde.

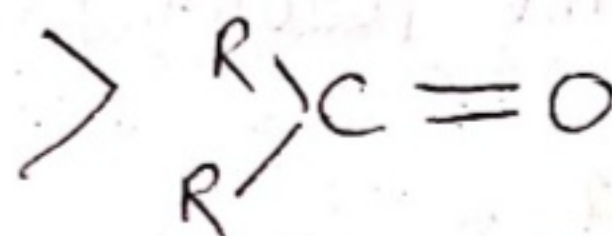
Reactivity Towards Nucleophile



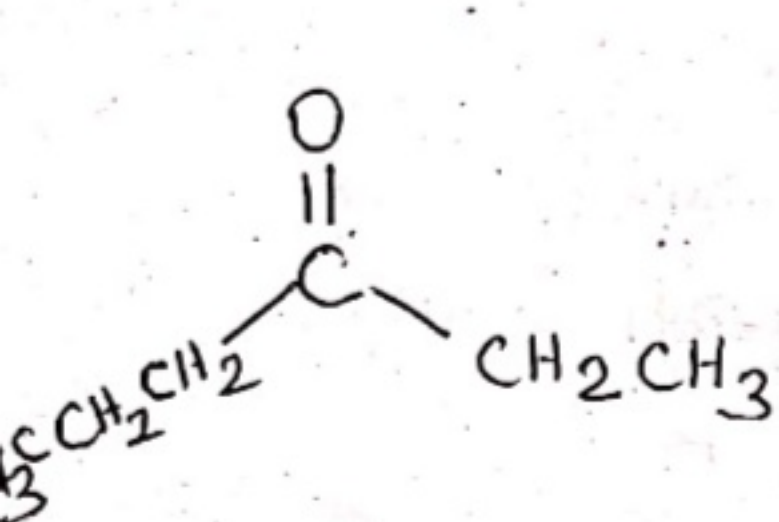
Formaldehyde



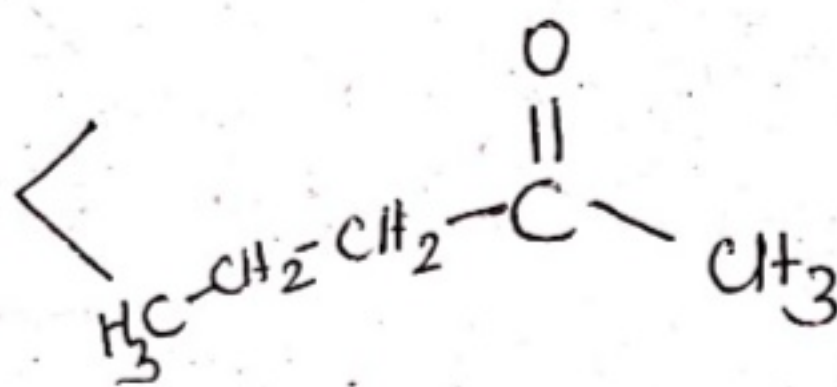
Aldehyde



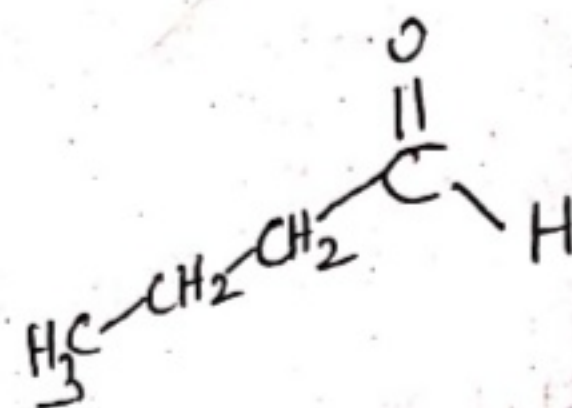
Ketone



More Steric Effect



Lesser Steric Effect



Less Steric Effect

To be continued in next lecture...