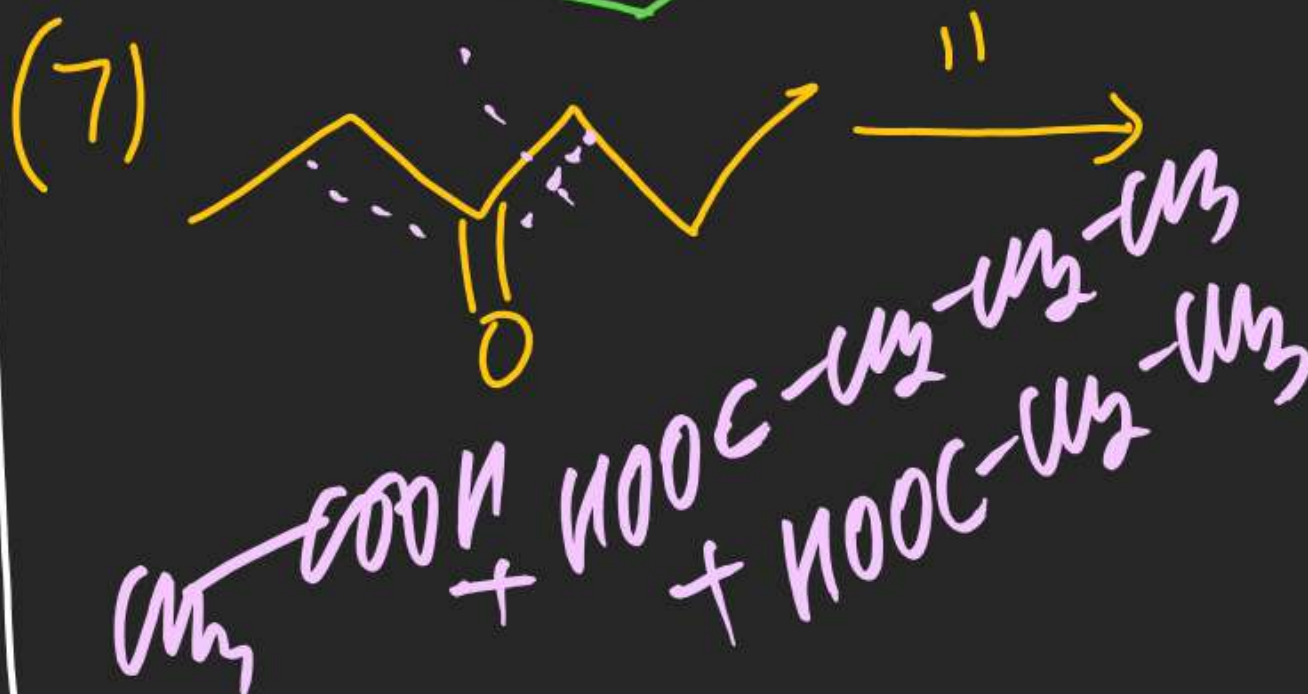
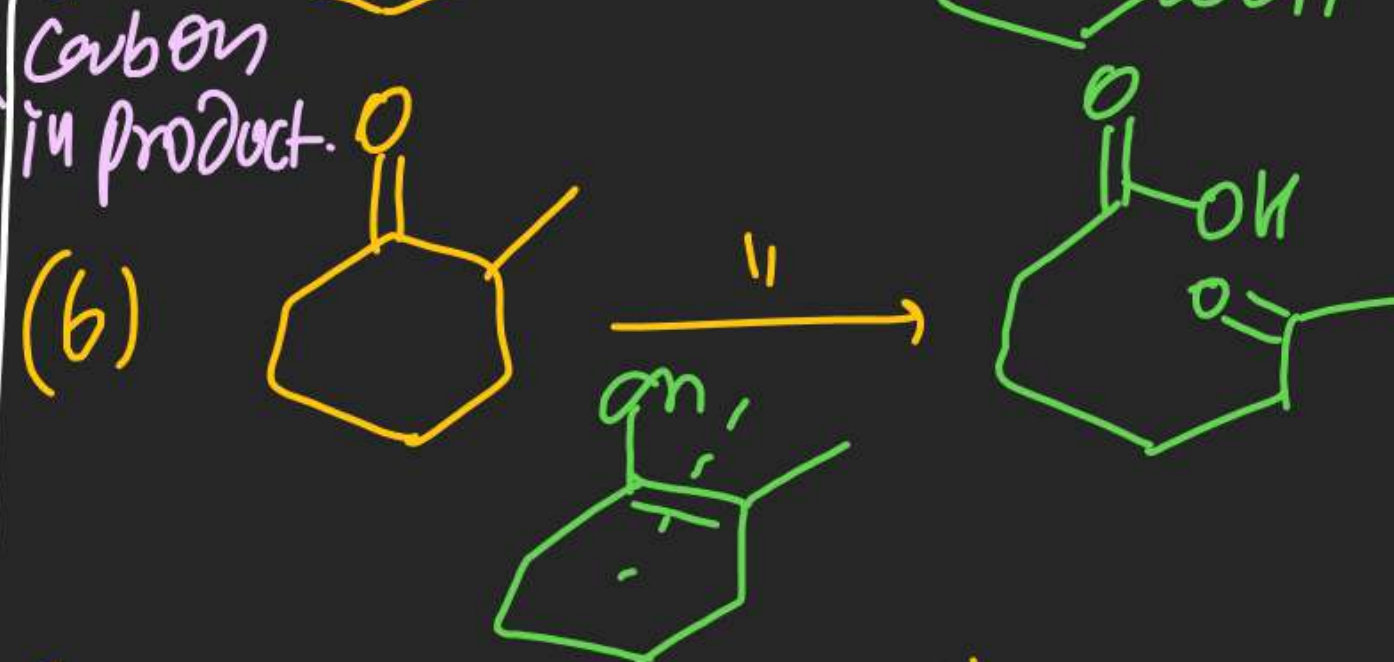
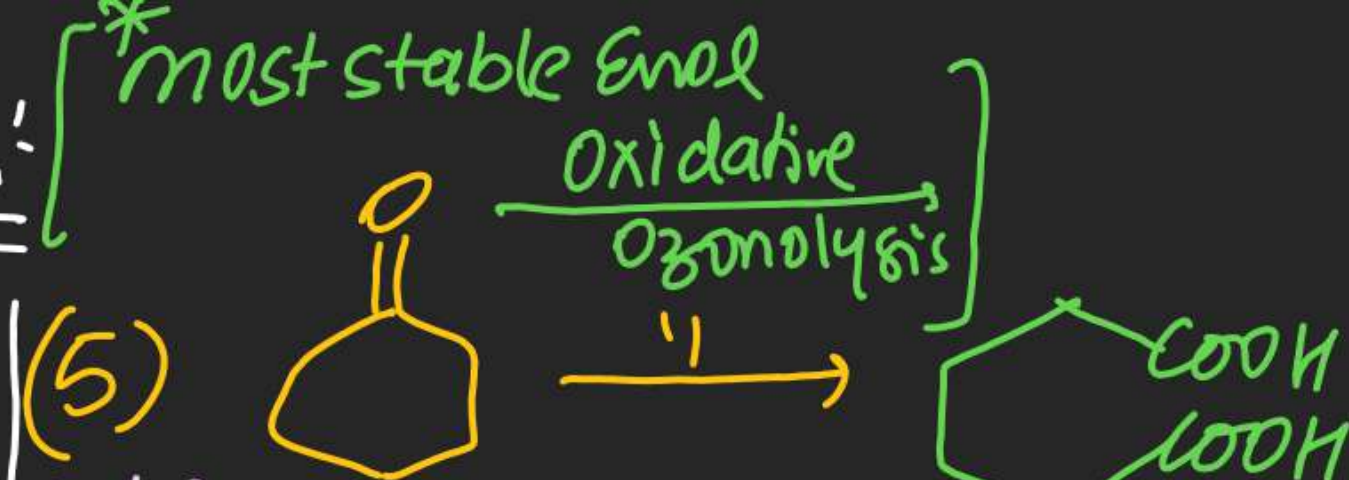
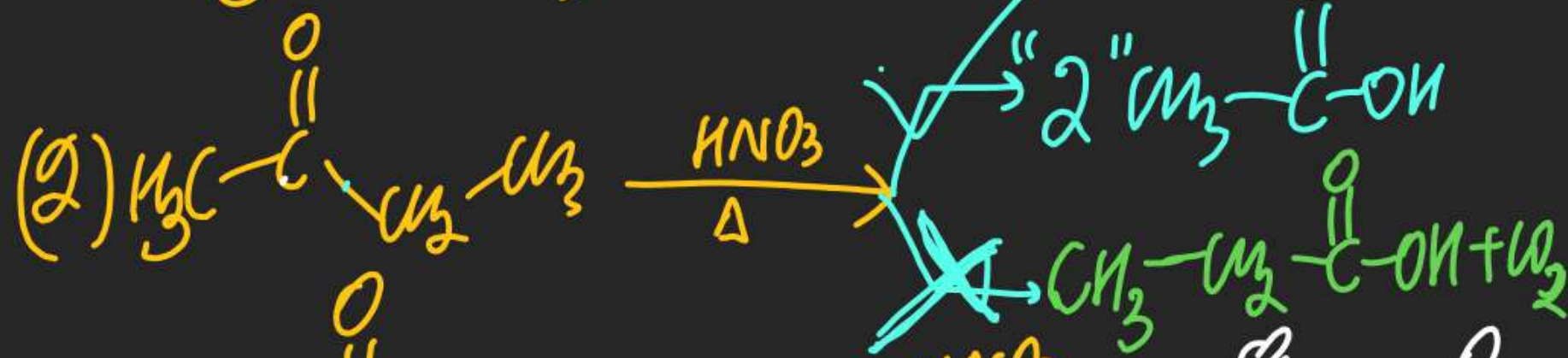
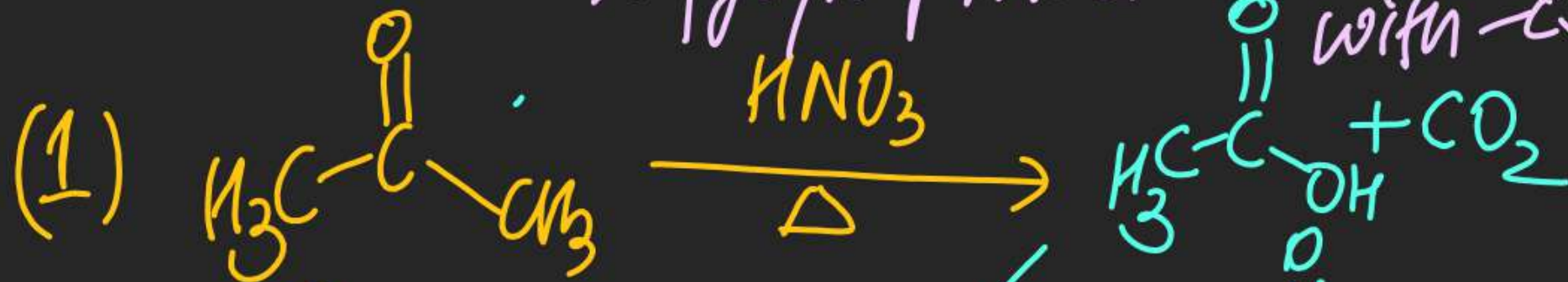




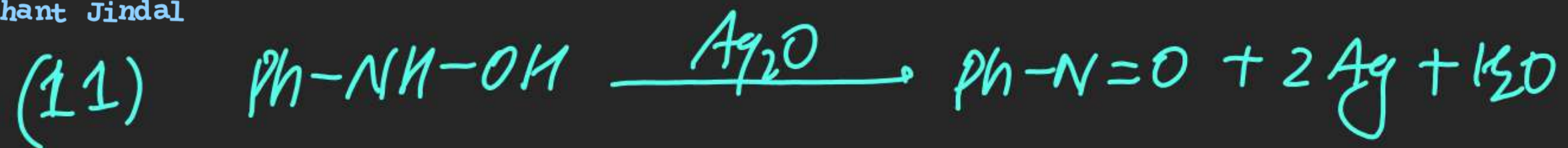
(#) Oxidation of  $\text{C}=\text{C}$  in Drastic Condition:

Popoff's Rule: Acc. to this Rule smaller alkyl group must be present with  $\text{C}=\text{C}$



\*most stable Enol  
Carbon in product.

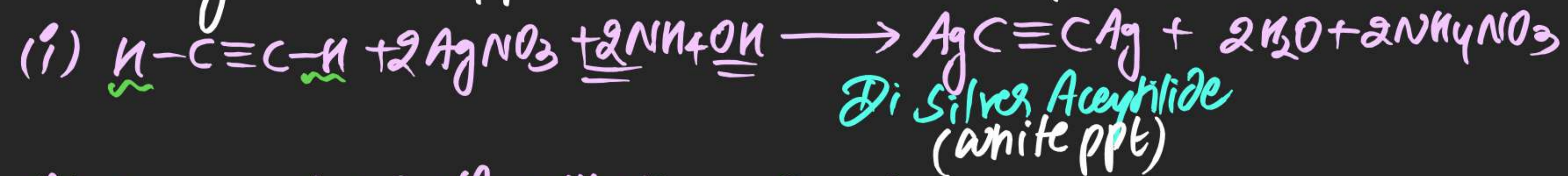




m.m.t.w

(13) By Ammonical  $\text{AgNO}_3$  solution:-

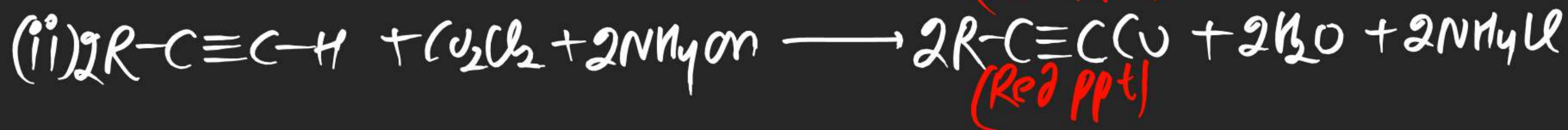
⇒ It gives white ppt with Terminal alkyne





(14) By Ammonical Cuprous chloride:

⇒ Terminal alkyne gives **Red** colour ppt.

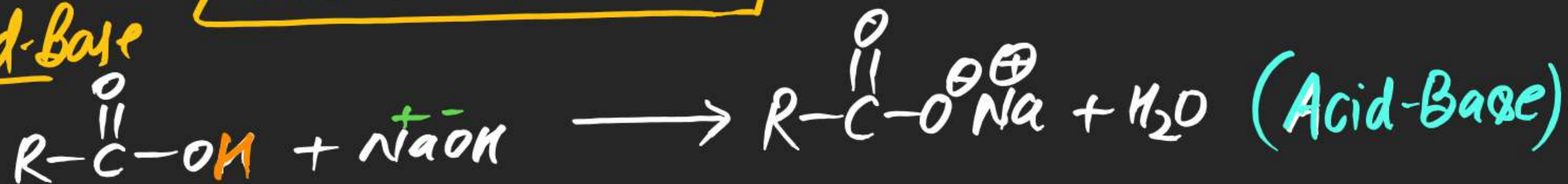


Note: Ammonical  $\text{AgNO}_3$  & Ammonical  $\text{Cu}_2\text{Cl}_2$  Both can be used for distinction b/w Terminal & Non Terminal alkyne.

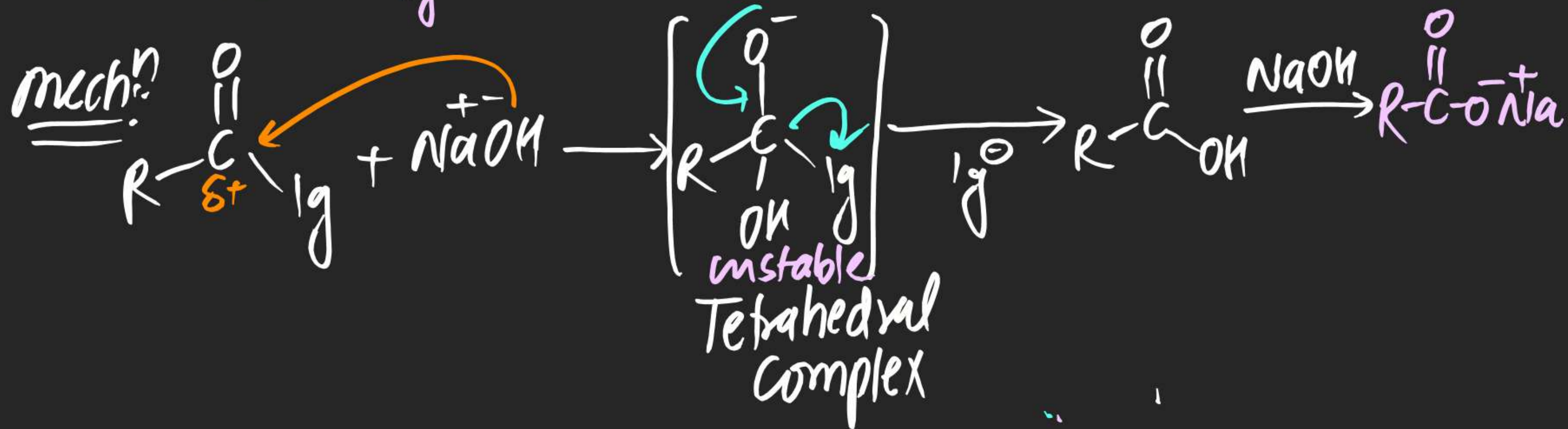
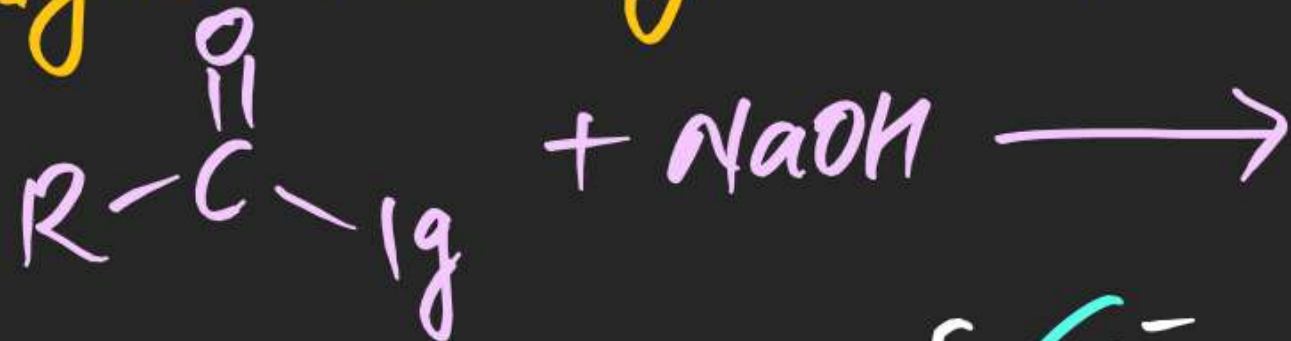


# Named Reaction

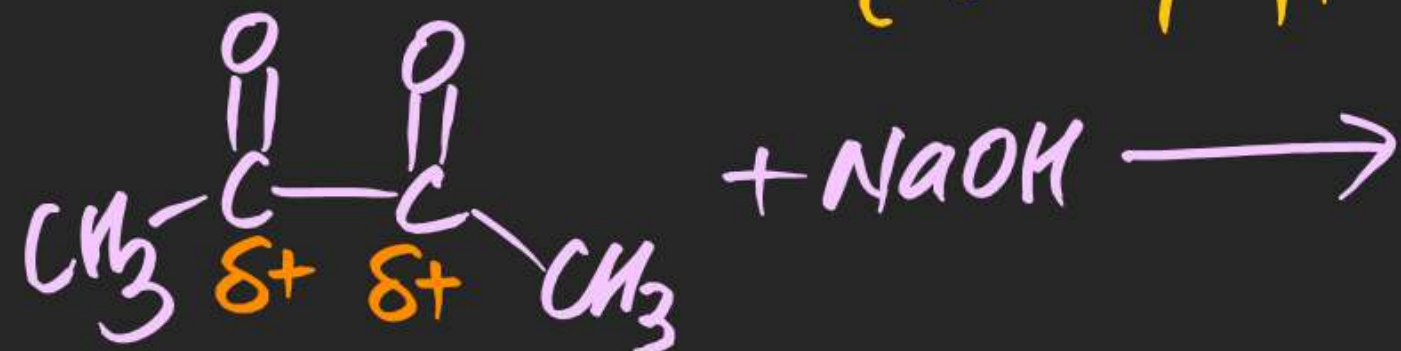
Case (i) Acid-Base



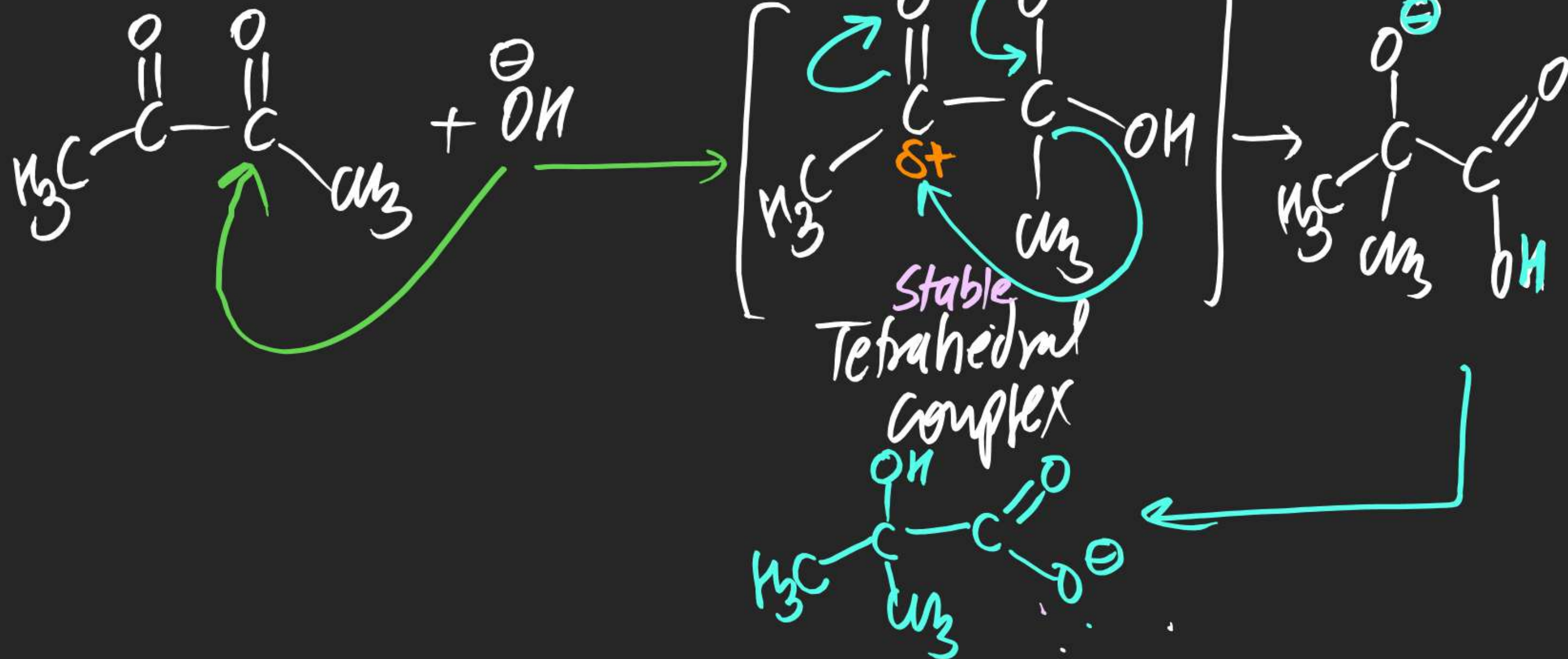
Case (ii) Ig at Carbonyl Carbon



Case (iii) In Case of 1,2 di Carbonyl compound.  
 (Aldehyde/ketone)



mech<sup>n</sup>

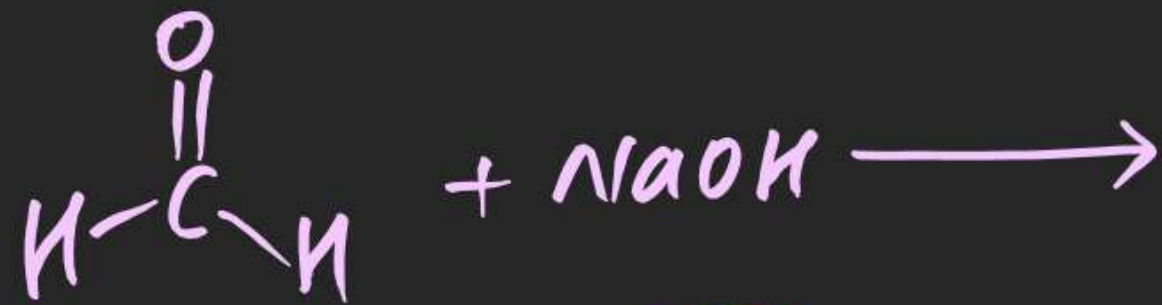






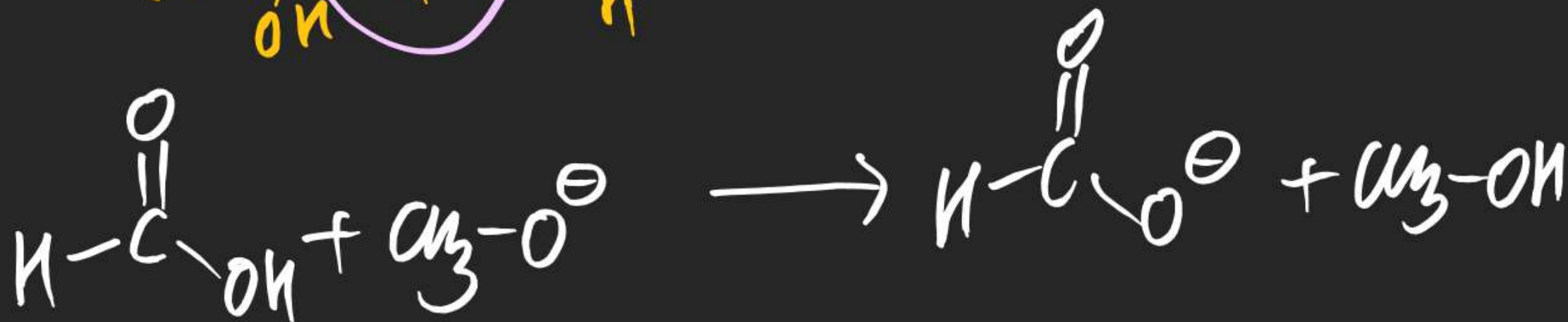
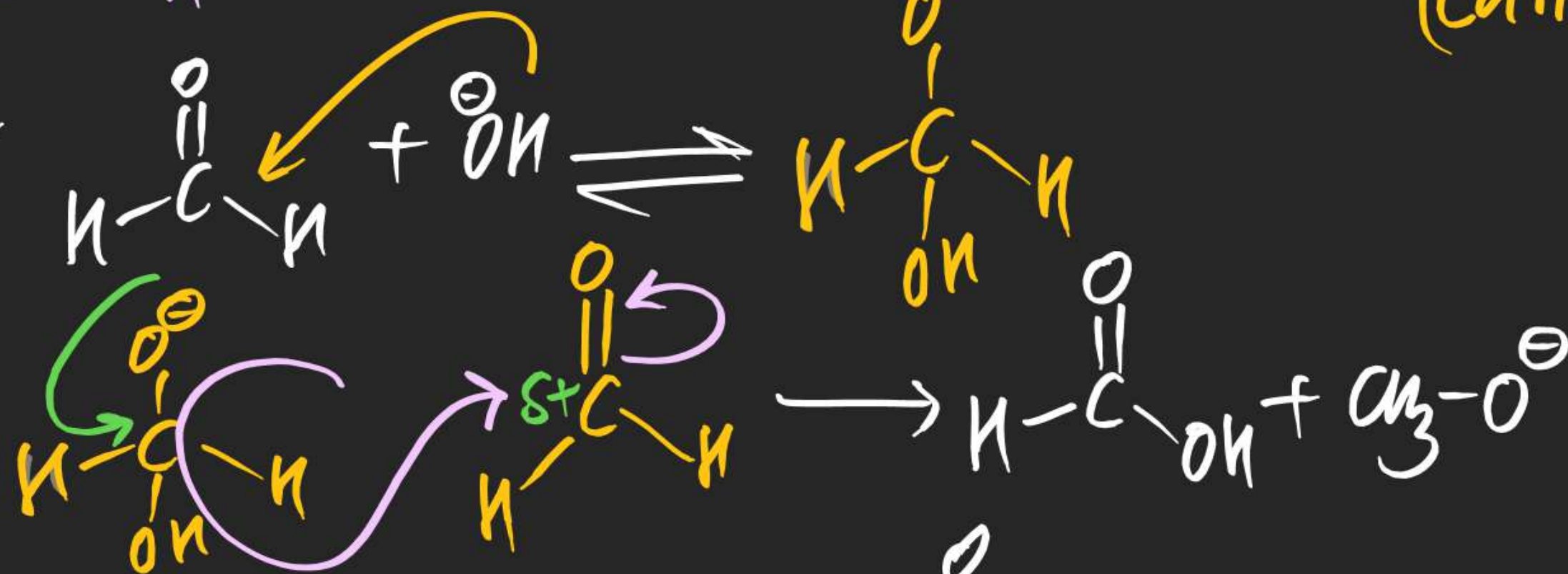


Case(V): When Carbonyl Compound doesn't contain  $\alpha$  'H'.  
 $(\text{H}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}, \text{C}_6\text{H}_5-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}, \text{>C}=\text{O} \cdots)$

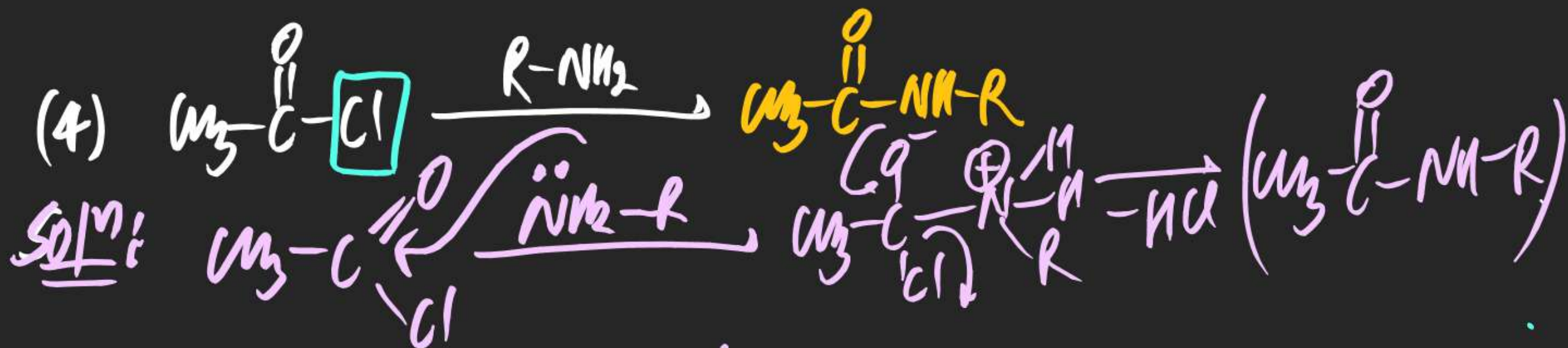
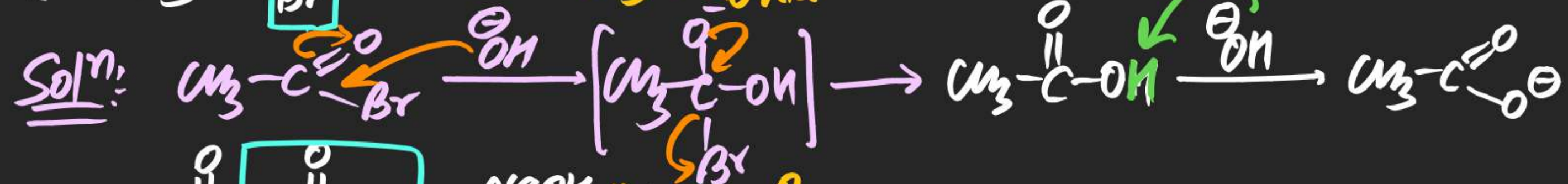


(Cannizzaro's Rxn)

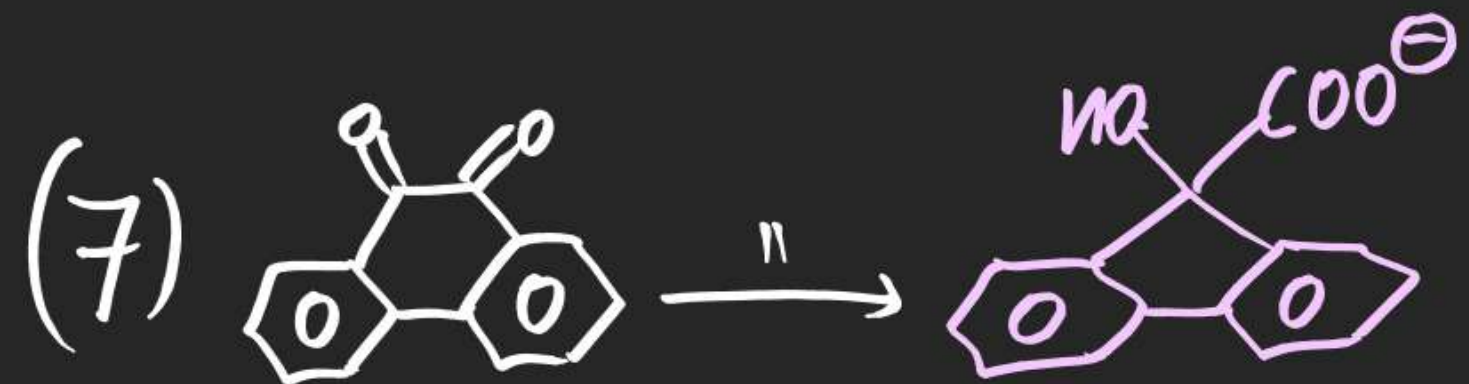
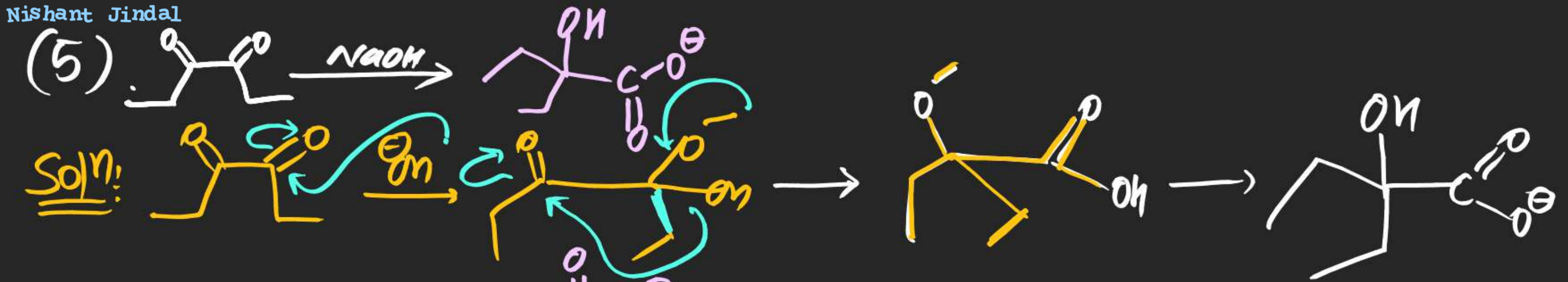
mech<sup>n</sup>:



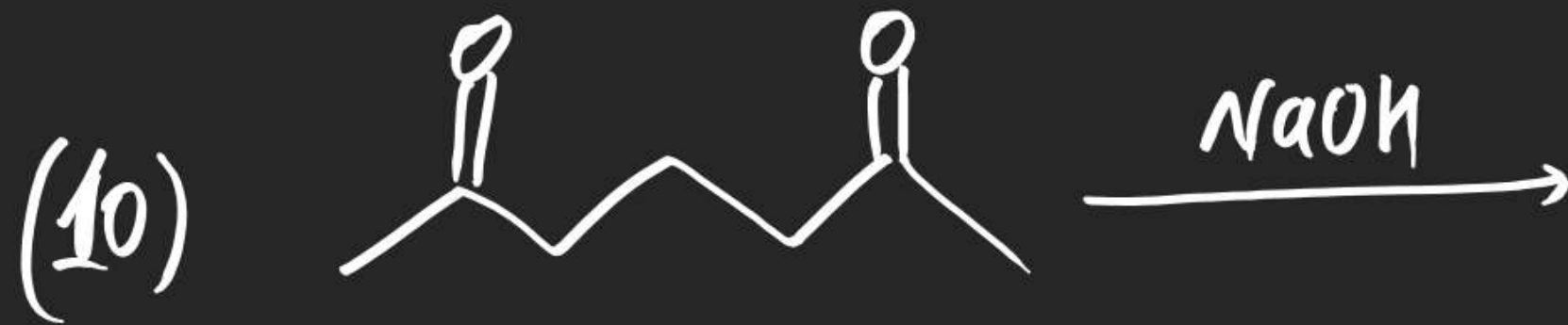
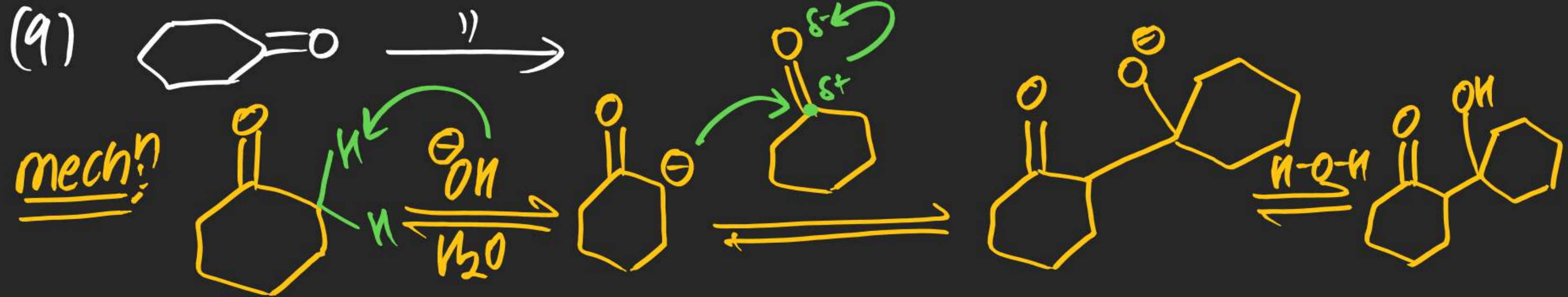














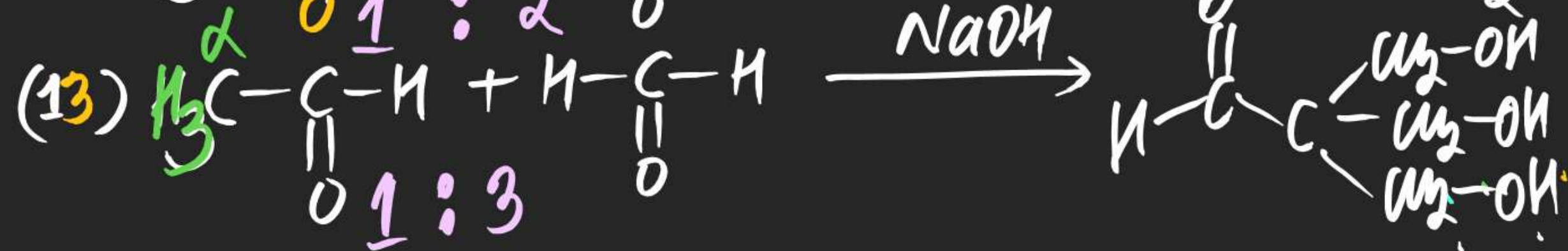
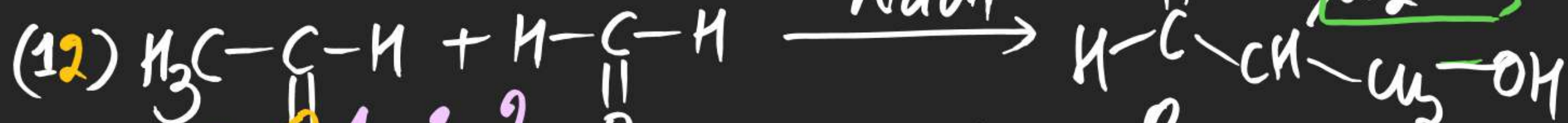
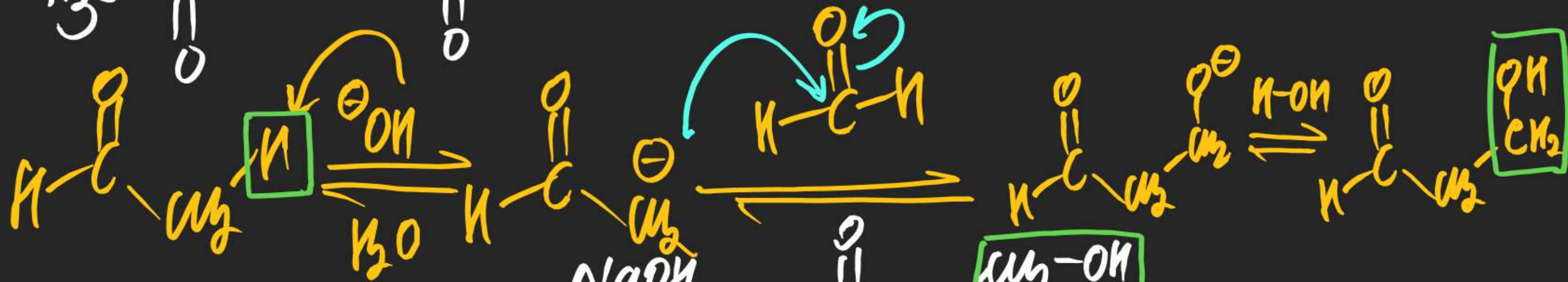
mech<sup>n</sup>



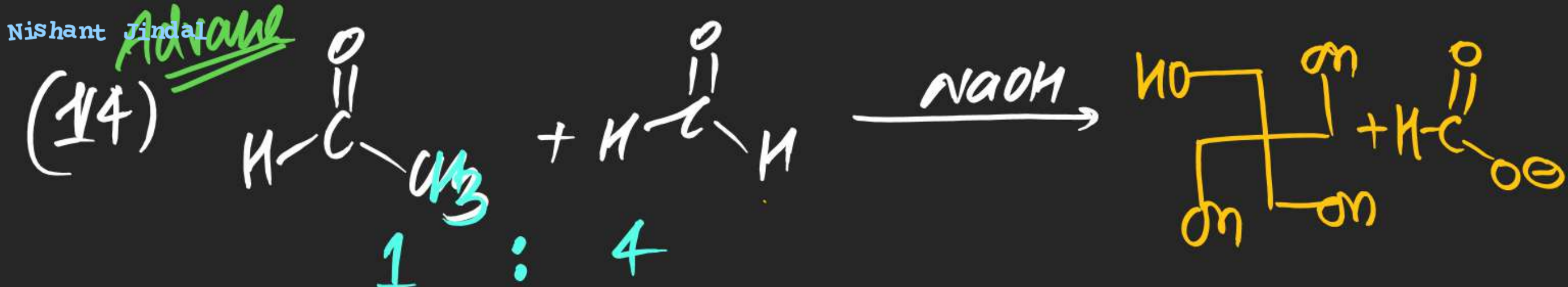
(11)



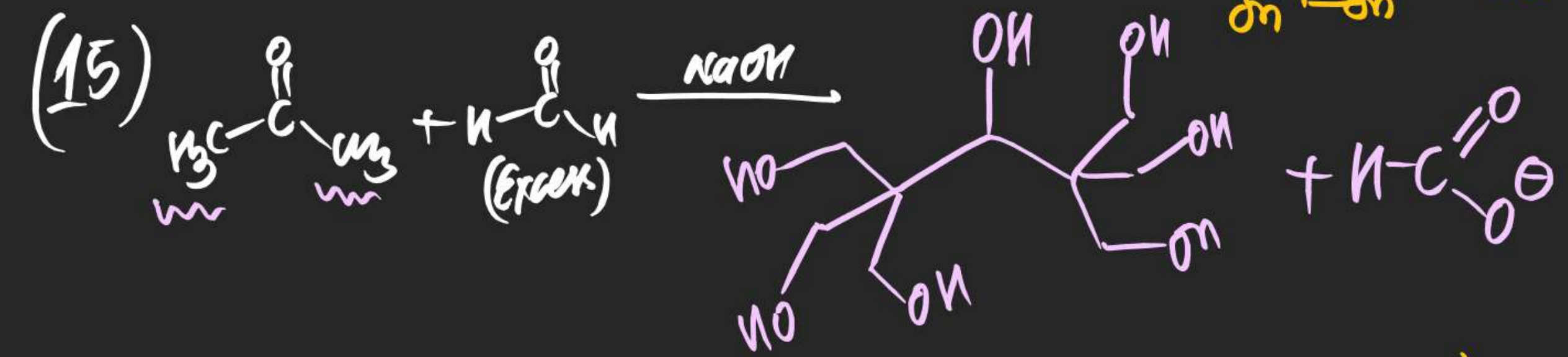
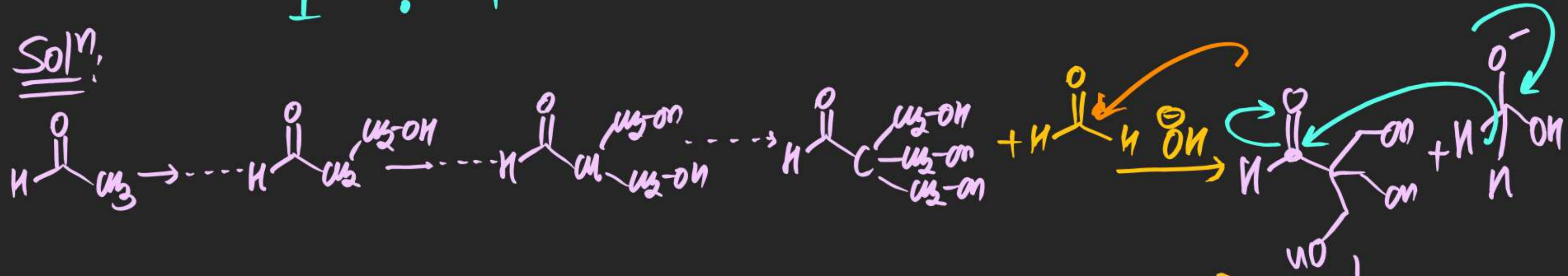
mech<sup>n</sup>



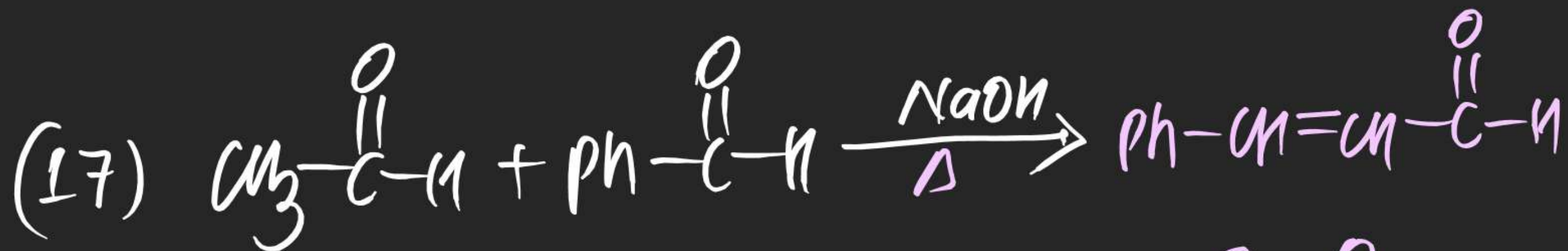
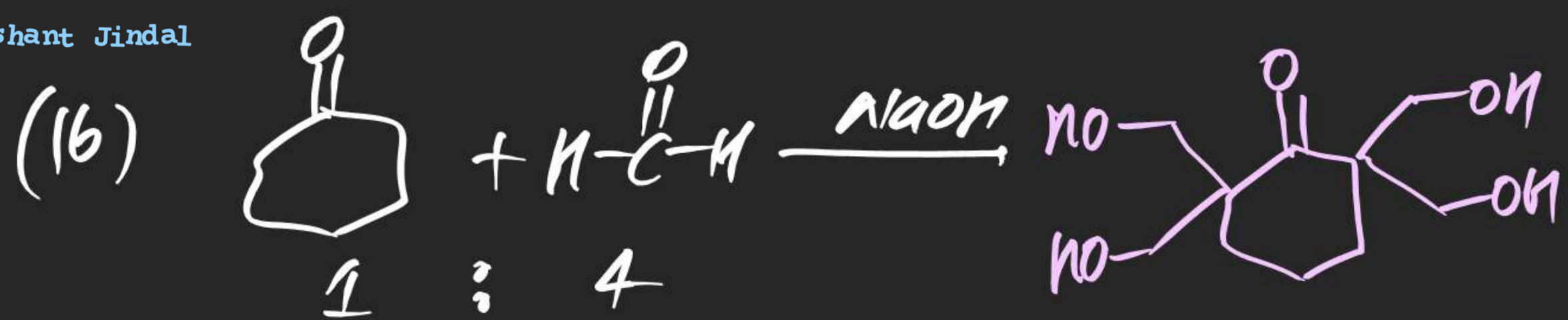




Sol<sup>n</sup>:

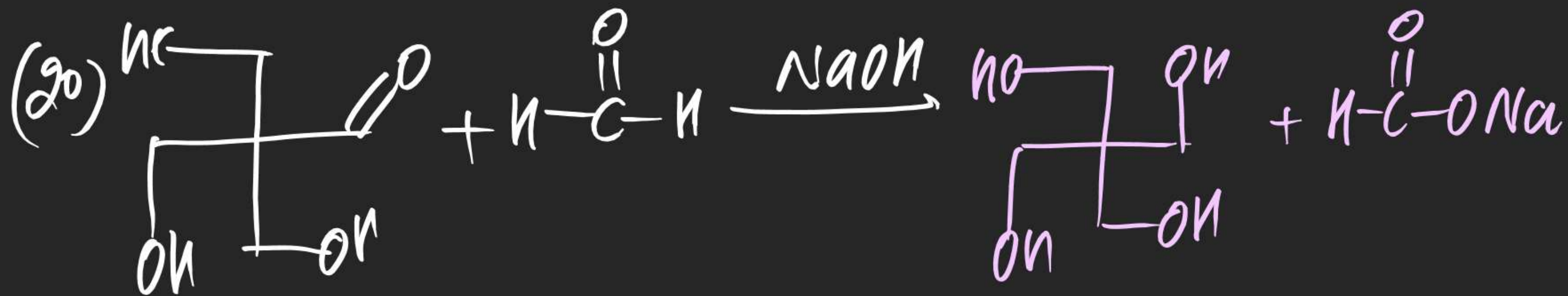
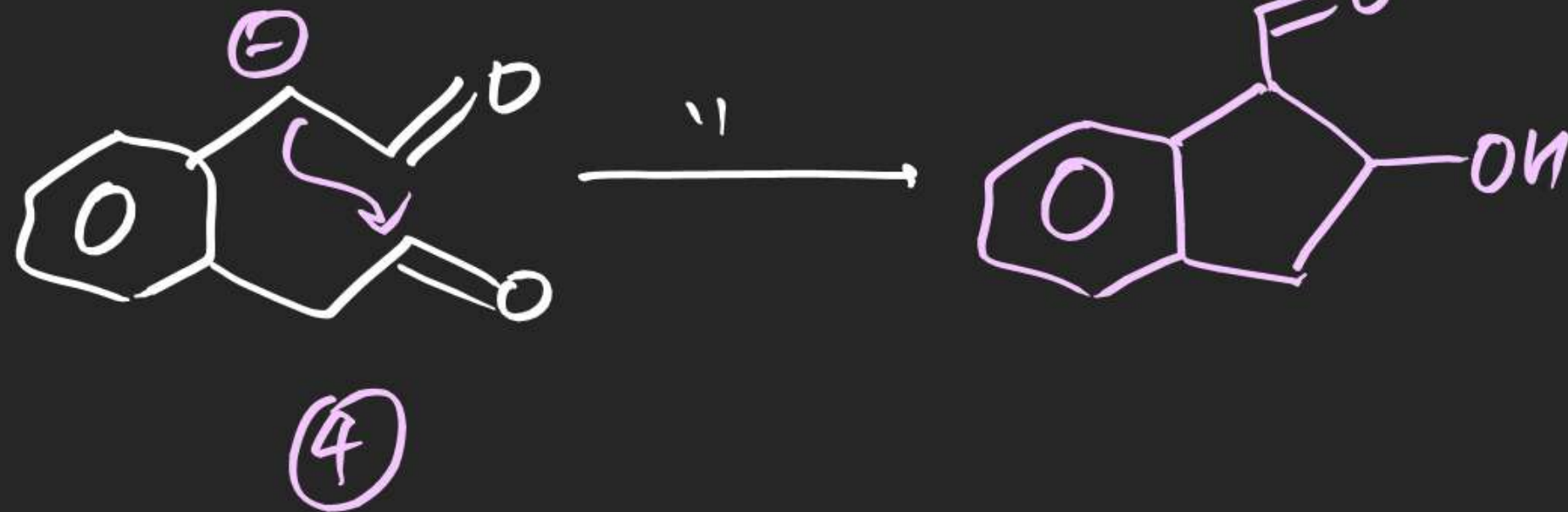








(19)



# (#) Haloform Reaction



$\Rightarrow$  Trihalogen derivative of methane

Ex:  $\text{CHF}_3$ ,  $\text{CHCl}_3$ ,  $\text{CHBr}_3$ ,  $\text{CHI}_3$

## (\*) Iodoform:

$\Rightarrow$  used as a Antiseptic

~~m.i.d~~  $\Rightarrow$  yellow crystal

~~m.i.d~~ Iodoform Test is used in POC for distinction of methyl carbonyls & methyl carbinols.



$\Rightarrow$  Gradually darken on exposure of sunlight.



## (\*) Chloroform

$\Rightarrow$  used as Anesthetic

$\Rightarrow$  Sweet smelling liquid.

$\Rightarrow \text{CHCl}_3$  gets easily oxidised



in to poisonous phosgene gas.



$\Rightarrow$   $\text{CHCl}_3$  is stored under higher precaution.

(a) Bottle must be completely filled

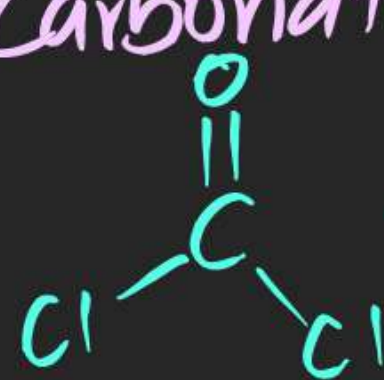
(b) \_\_\_\_\_ closed

(c) \_\_\_\_\_ Dark in colour.

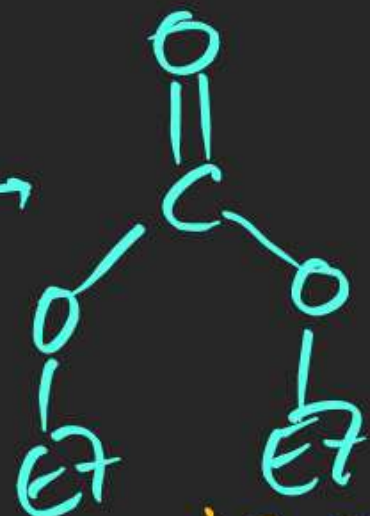
(d) Add small instalment of Ethanol  
it converts poisonous  $\text{COCl}_2$  in to



non poisonous Diethyl Carbonate.



(poisonous)



(Non poisonous)



## Method of Preparation of haloform:

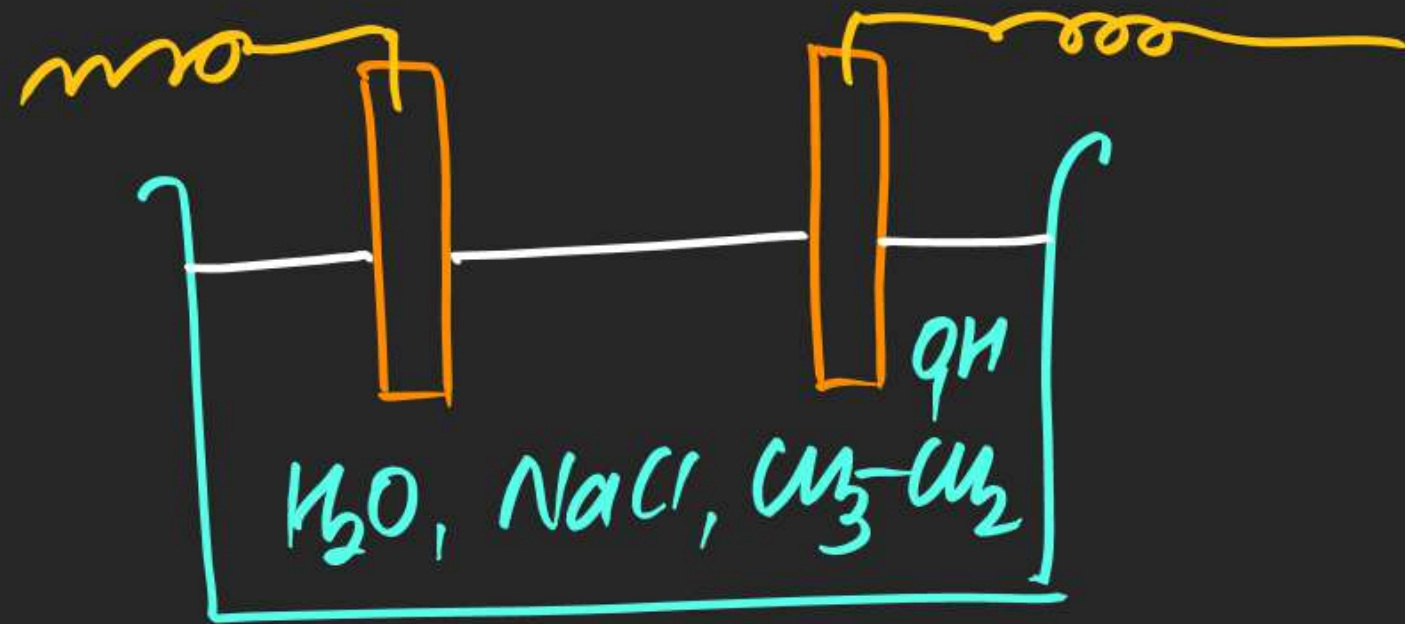
(1) By Reaction of chloral or chloral hydrate with alkali



(2) By Reaction of Acetone with Bleaching Powder:



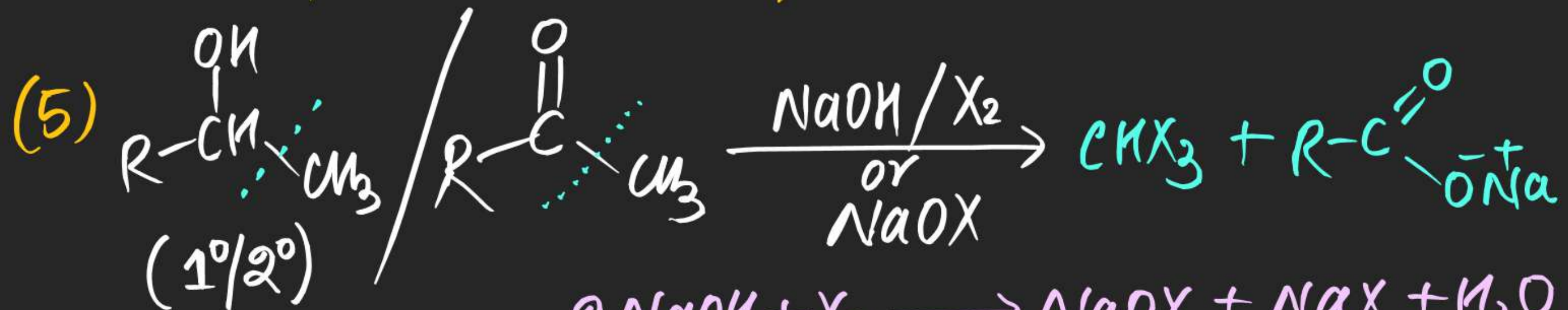
(3) By Electrolysis of Aq Solution of Ethanolic Sodium chloride  
Soln



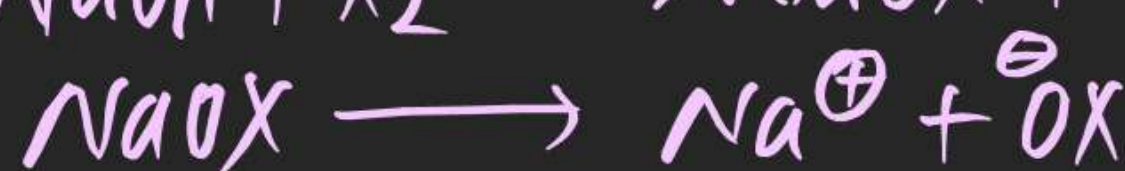
(4)



(4) Reaction of methyl carbinol ( $1^\circ/2^\circ$ ) or methyl Carbonyl with alkaline solution of  $X_2$ .

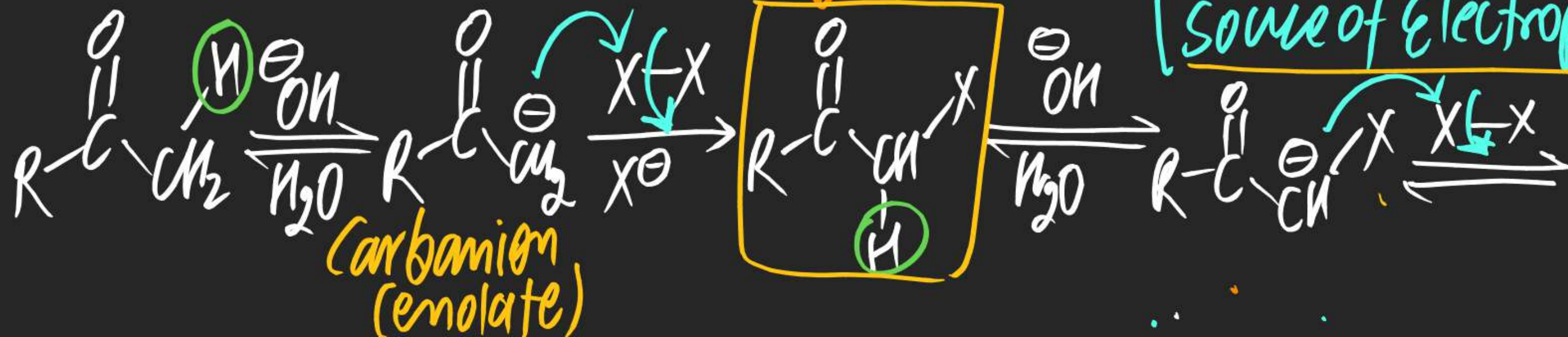


Mechanism:-

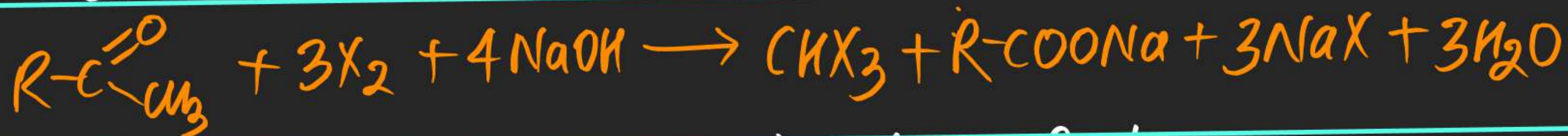
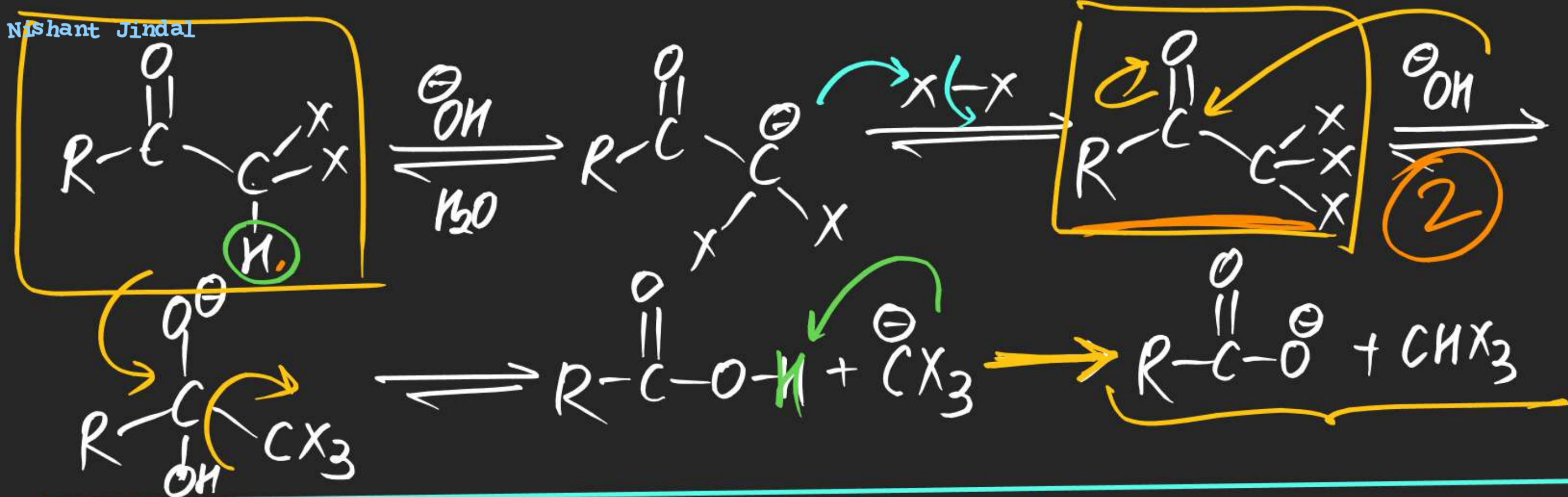


Oxidising agent  
Nucleophile  
Base

Source of Electrophile







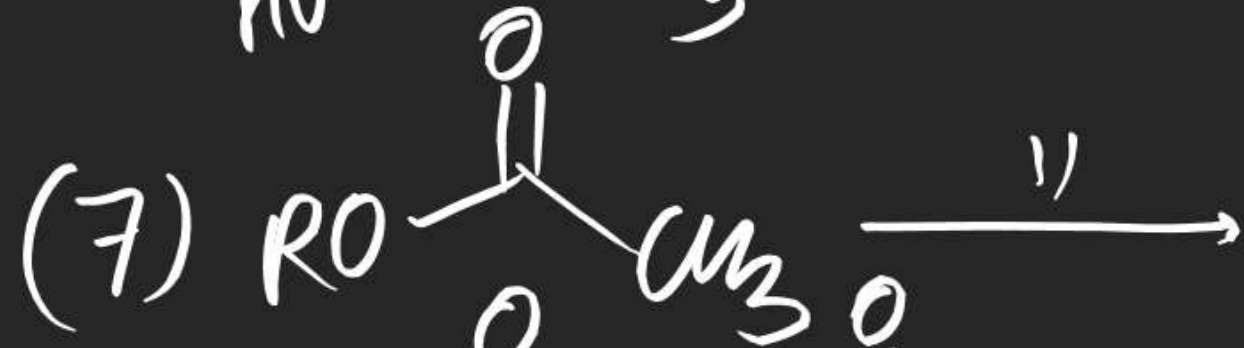
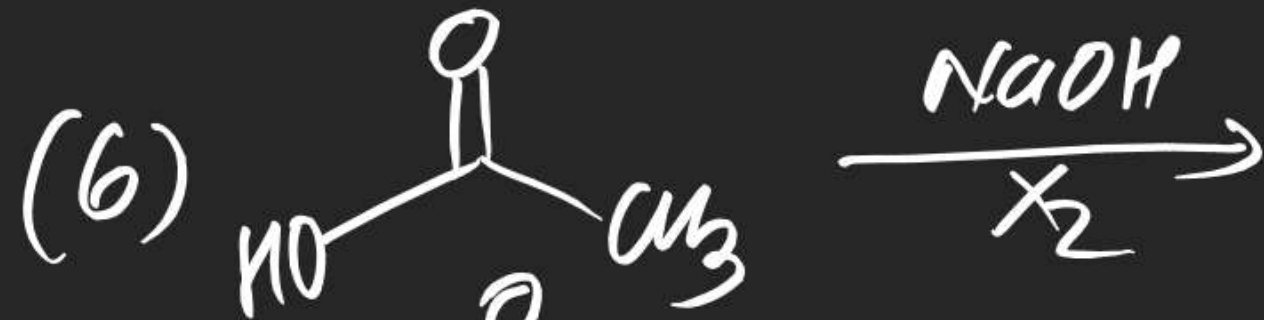
Note (i) Carbanion (enolate) intermediate

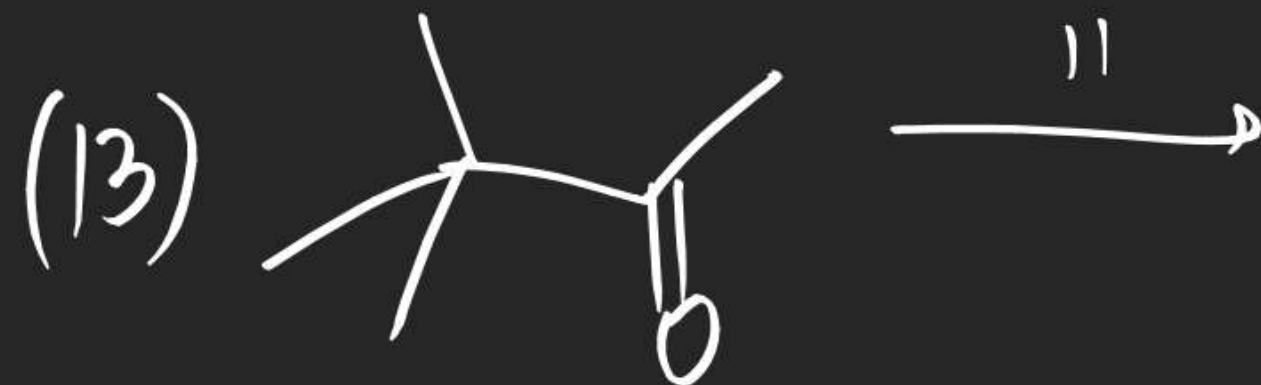
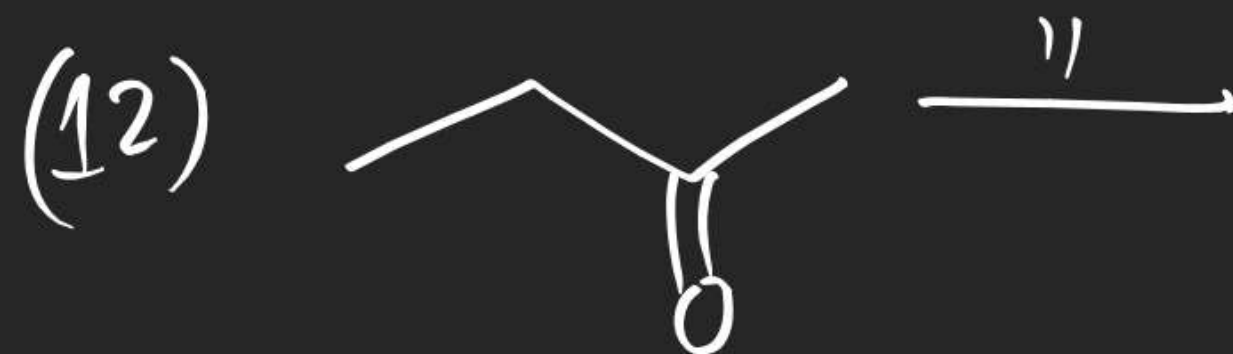
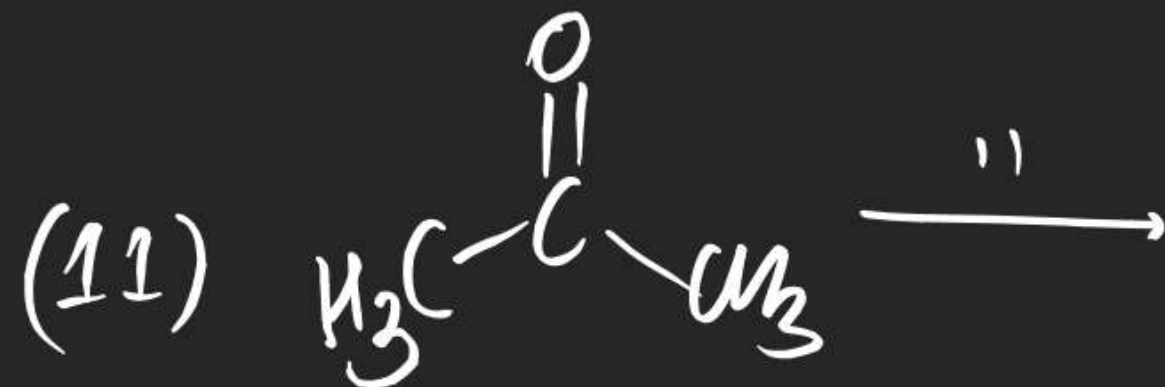
(ii) Oxidation Rxn

Imp (iii) Reaction is throughout accelerating hence monohalogenated  
 Dihalogenated & Trihalogenated product never can be

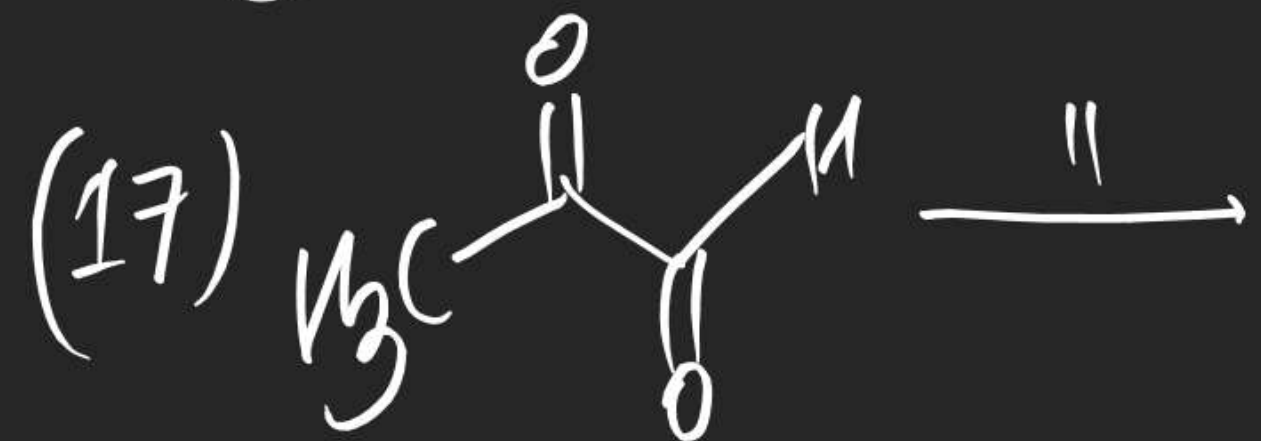
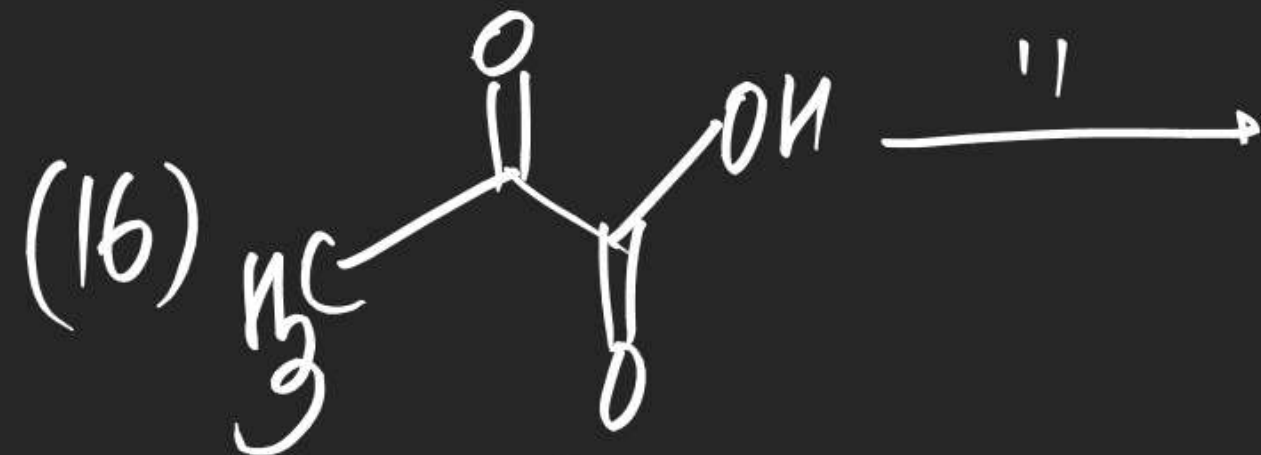
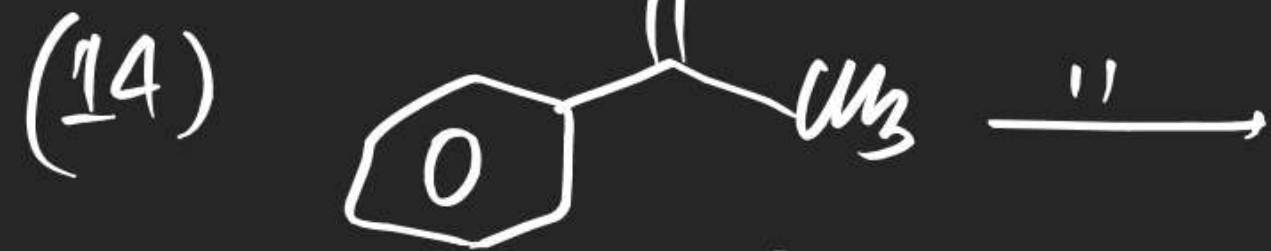


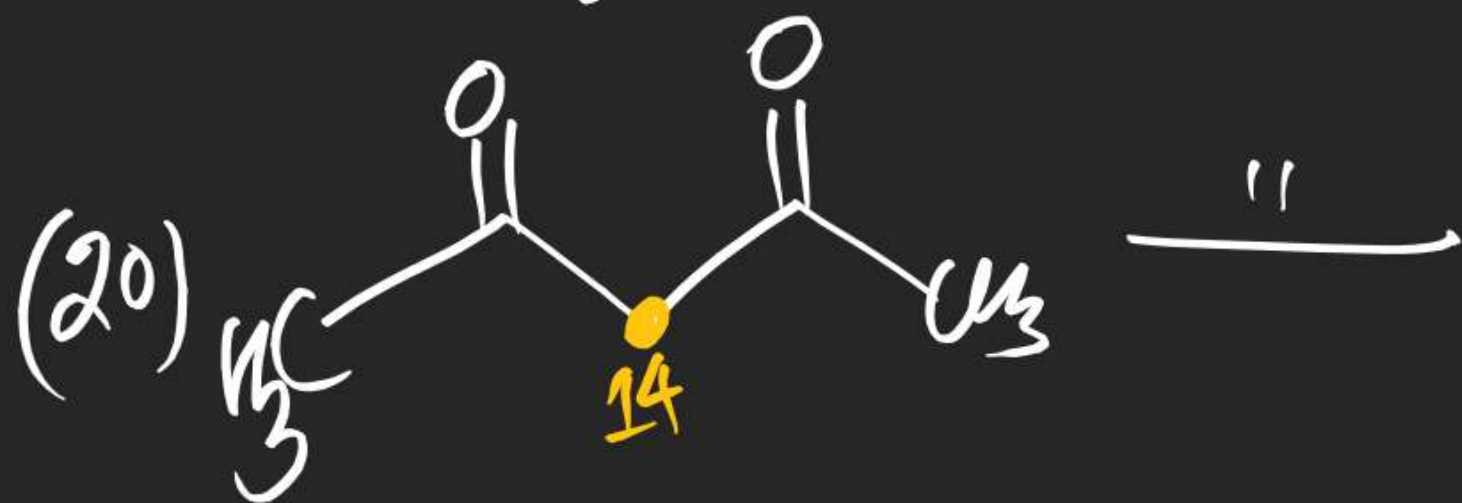
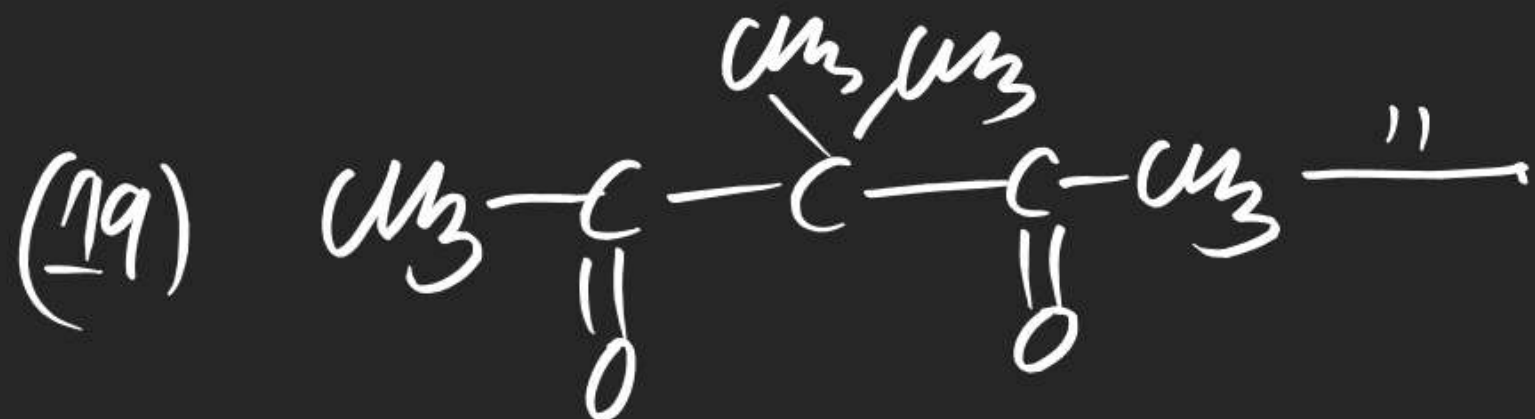
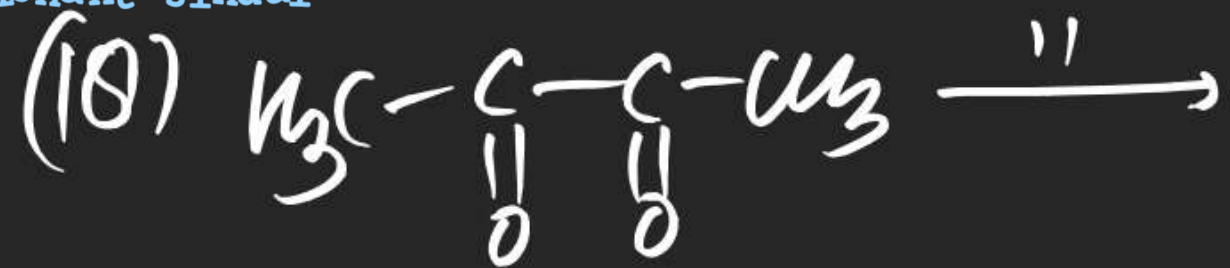
isolated in Basic cond<sup>n</sup>.



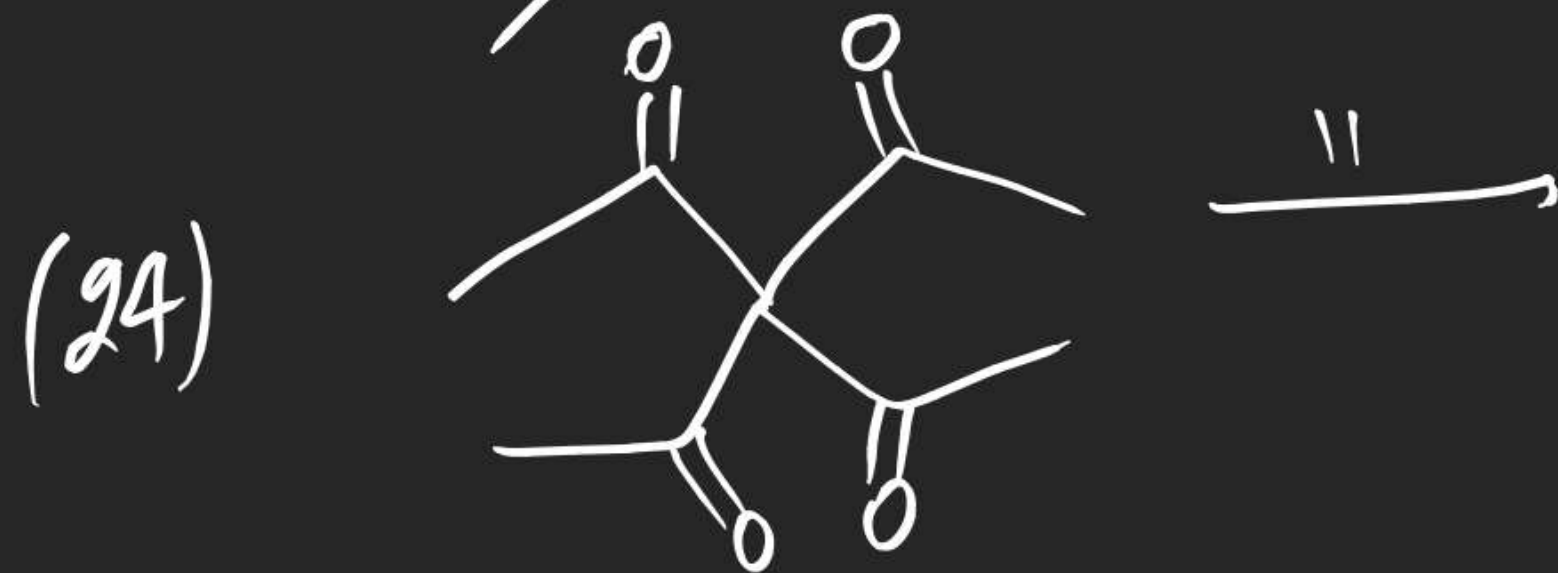
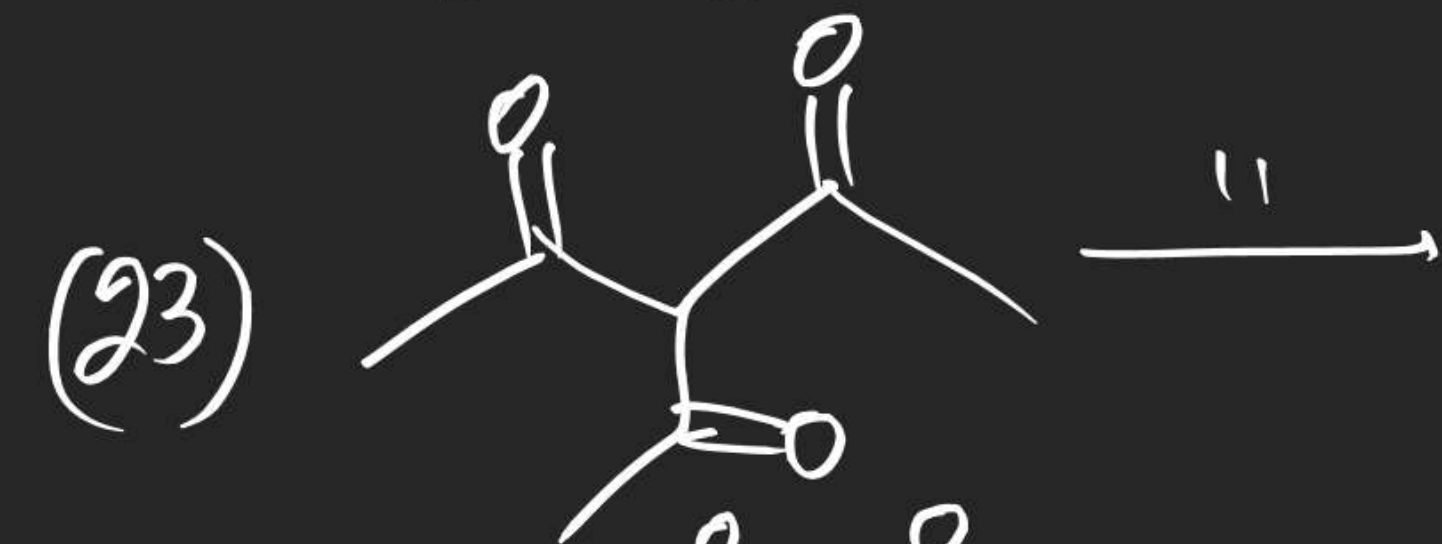
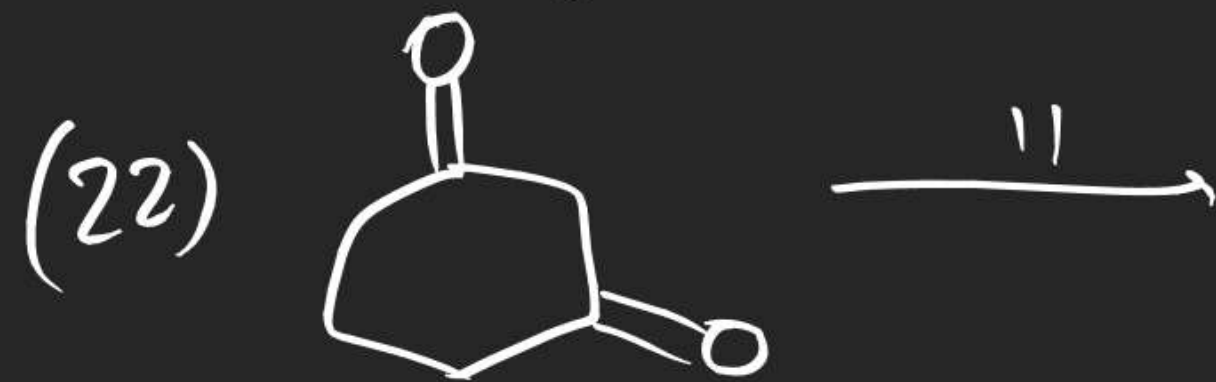


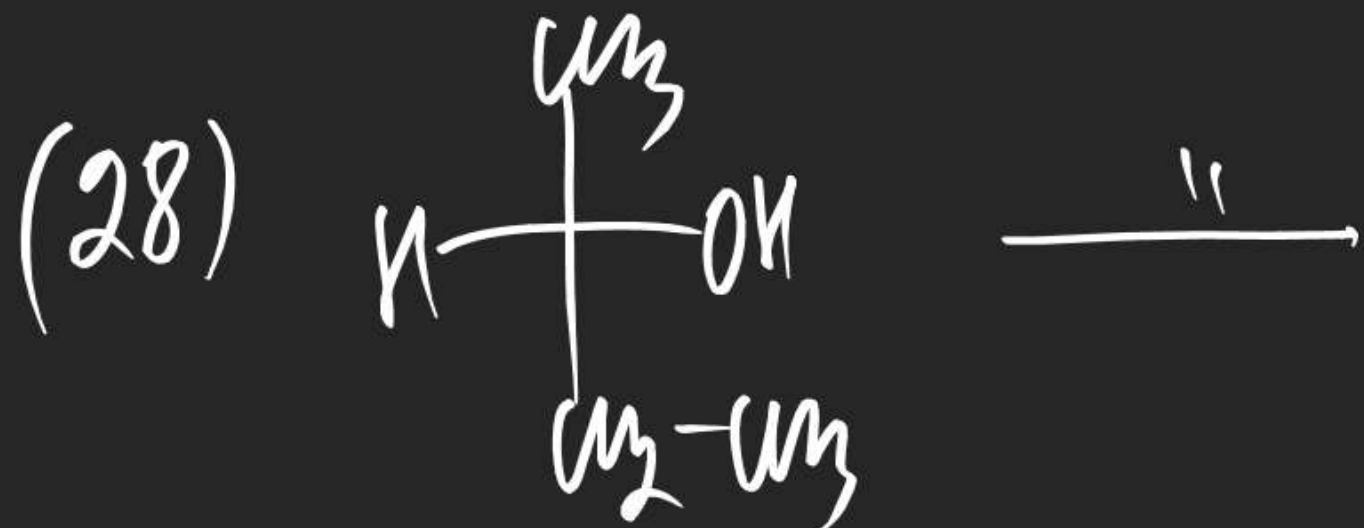
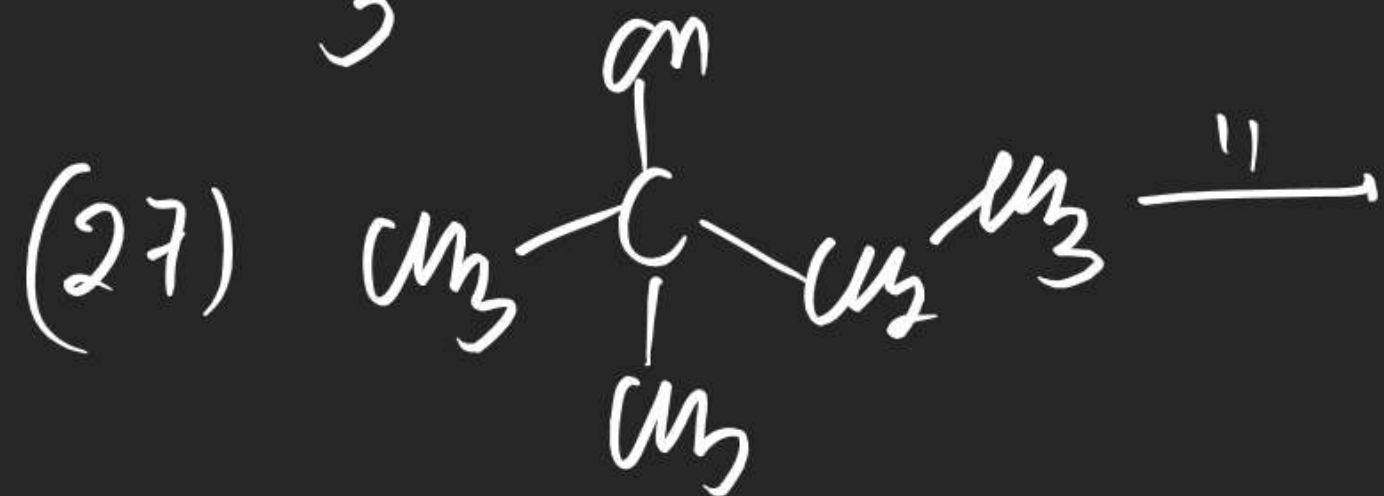
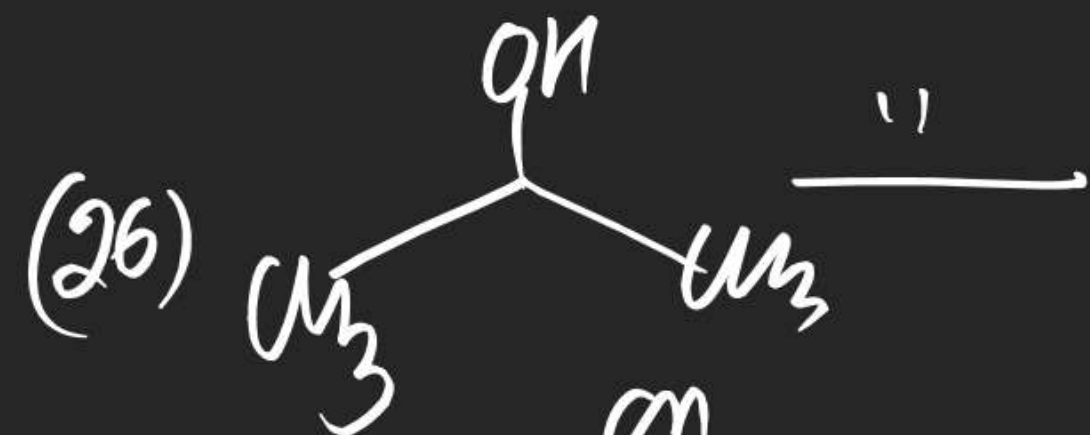




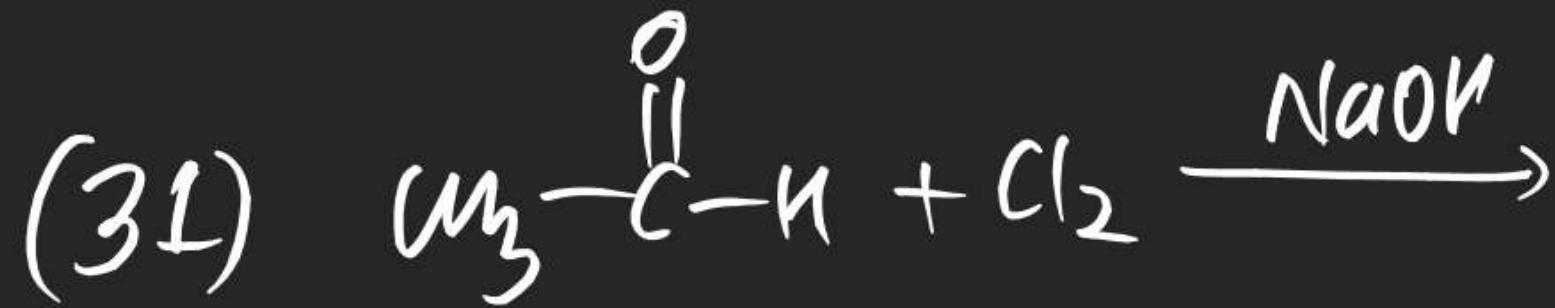
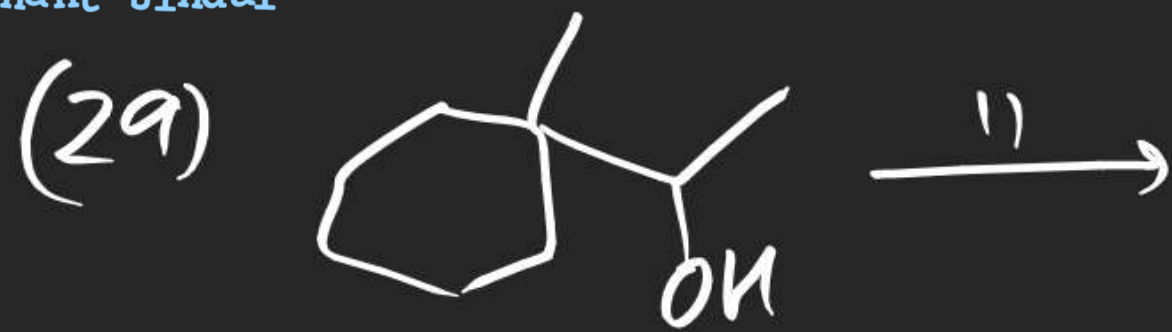












# (#) Acid Catalysed Halogenation:-

