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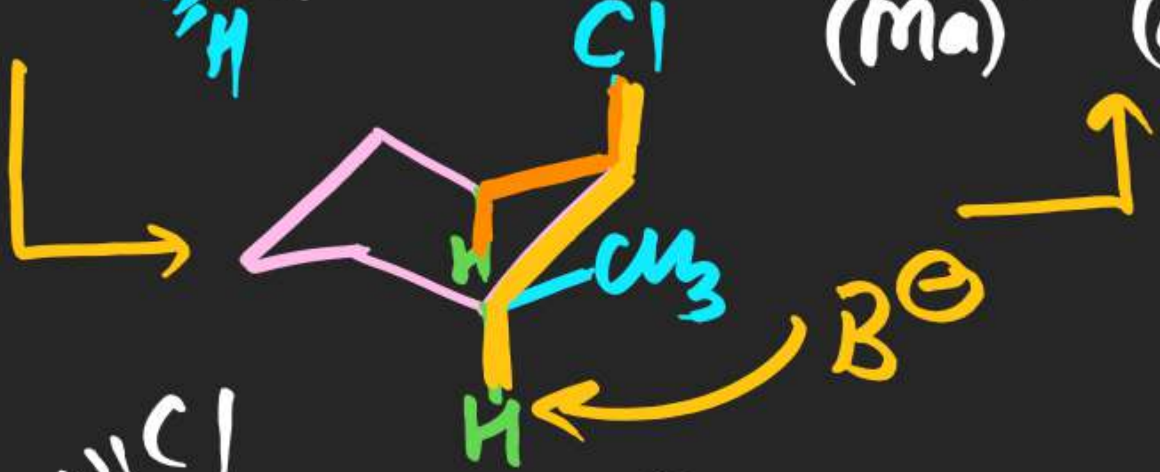
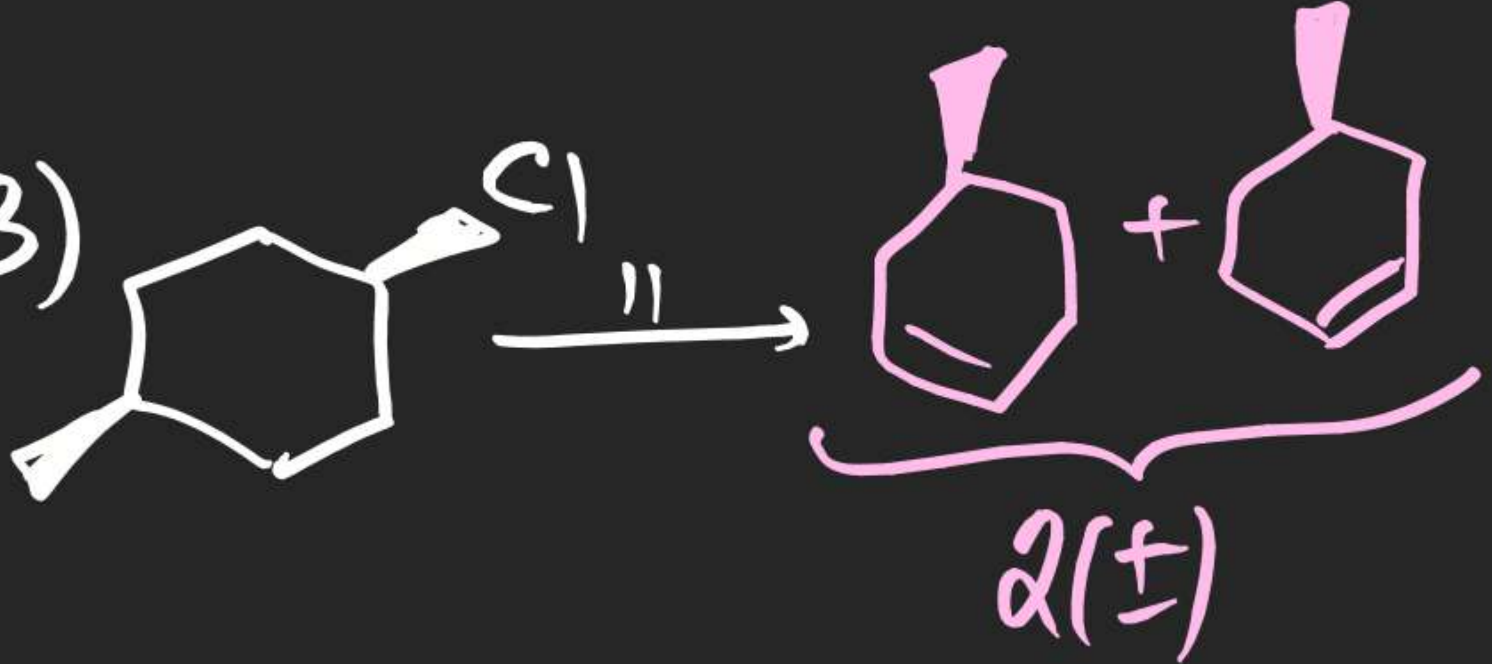
(21)

Soln:



(22)

(23)



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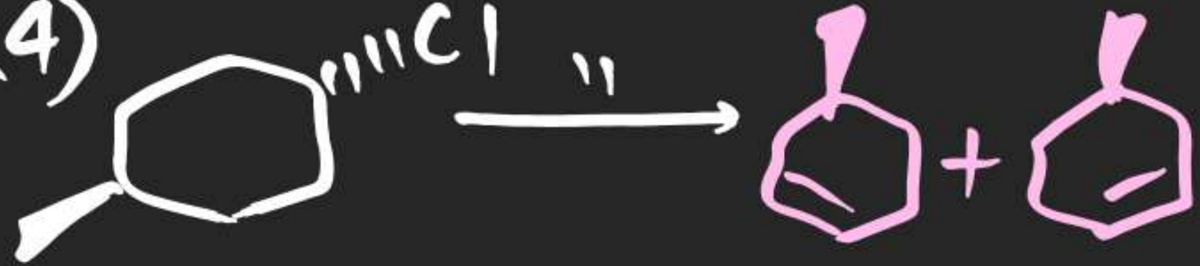

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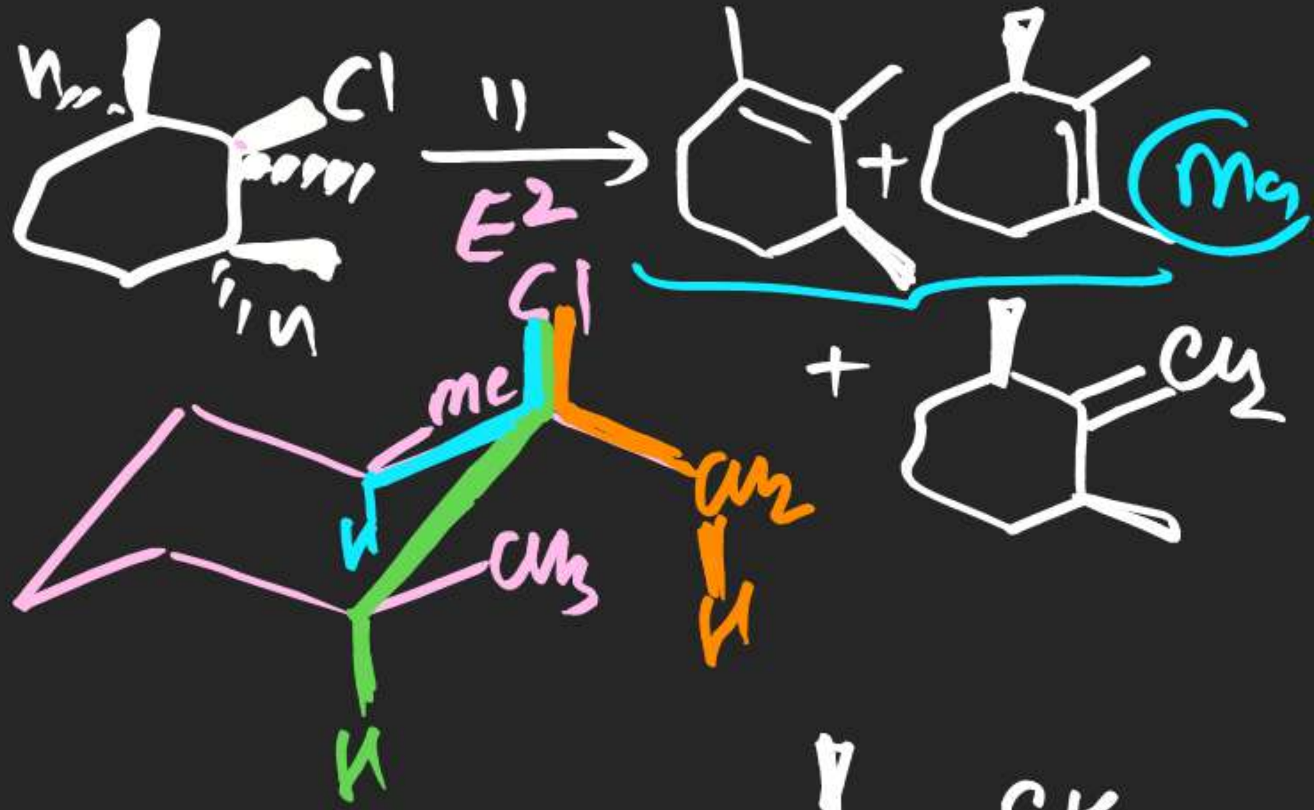

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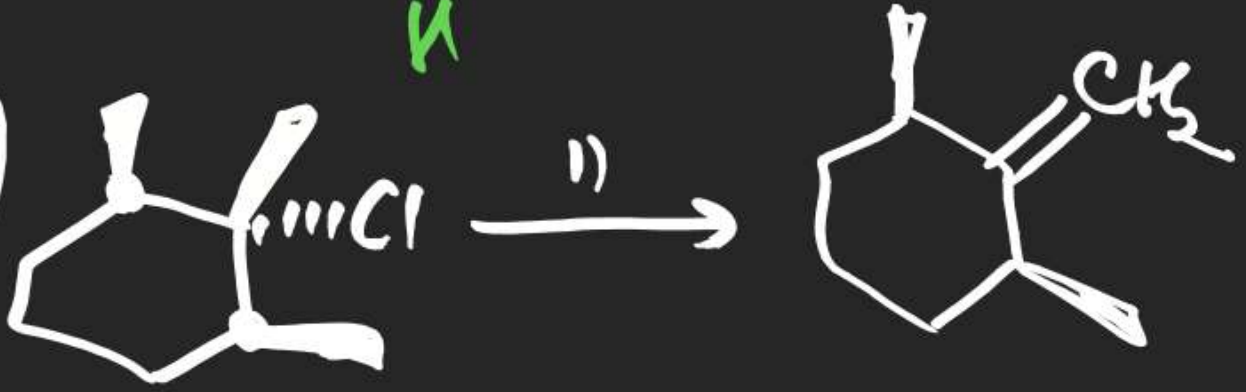

(27) In following observation

Base	Sytzeff	Hofmann
$^{\ominus}OH$	90%	10%
$^{\ominus}OMe$	82%	18%
$^{\ominus}O-C(Me)_3$	30%	70%
$^{\ominus}O-CEt_3$	15%	85%

Note Use of Bulkier Bases like ($Me_3C-O^{\ominus}$ & $Et_3C-O^{\ominus}$) gives Hofmann alkene as a Major Product.

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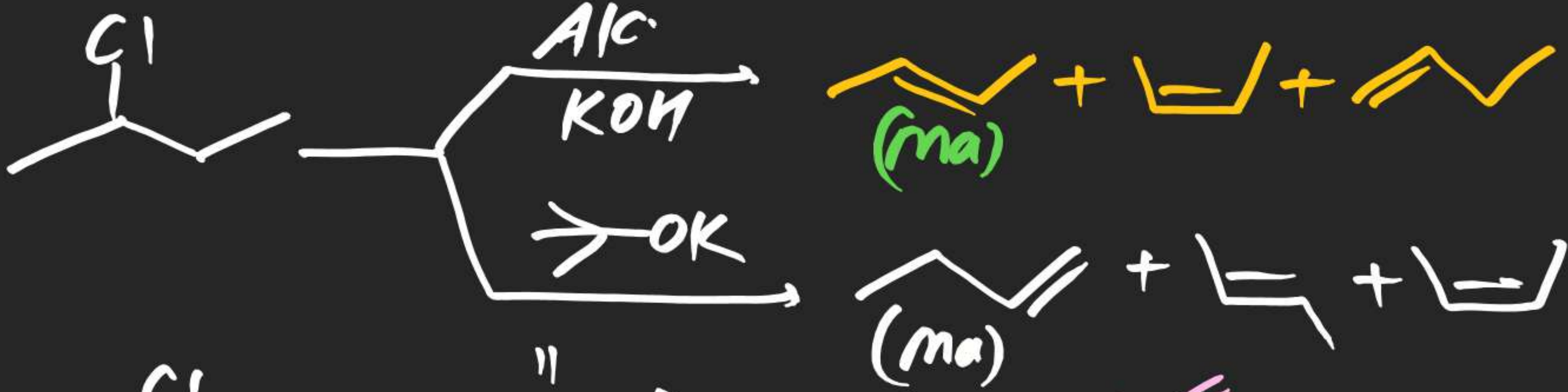
(28)



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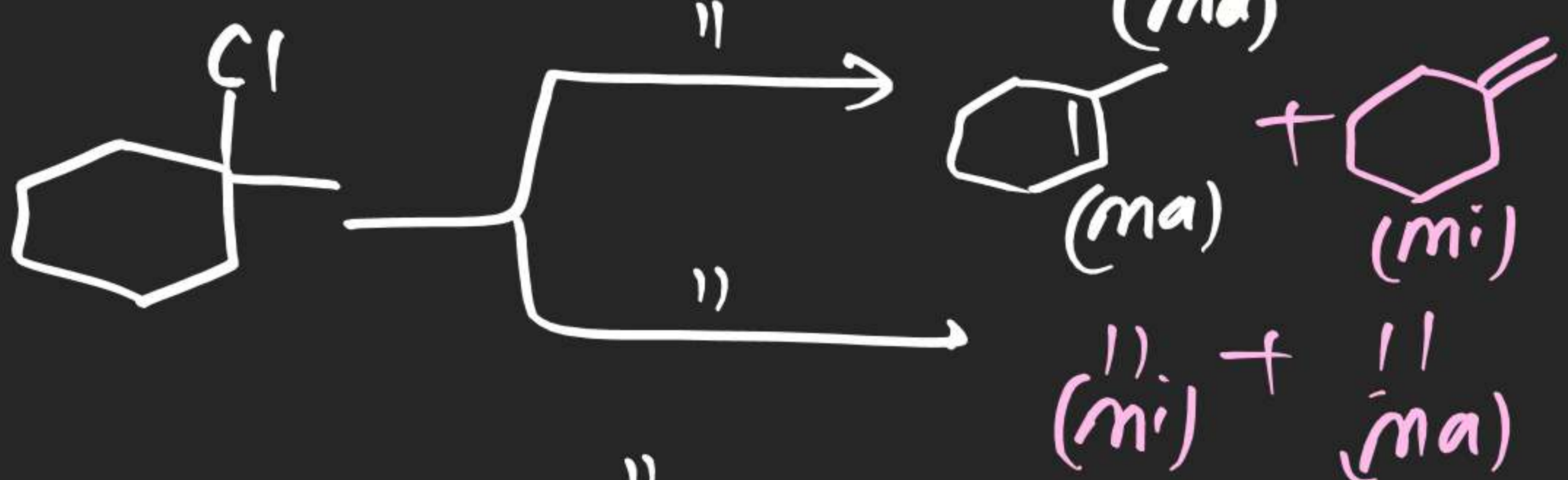

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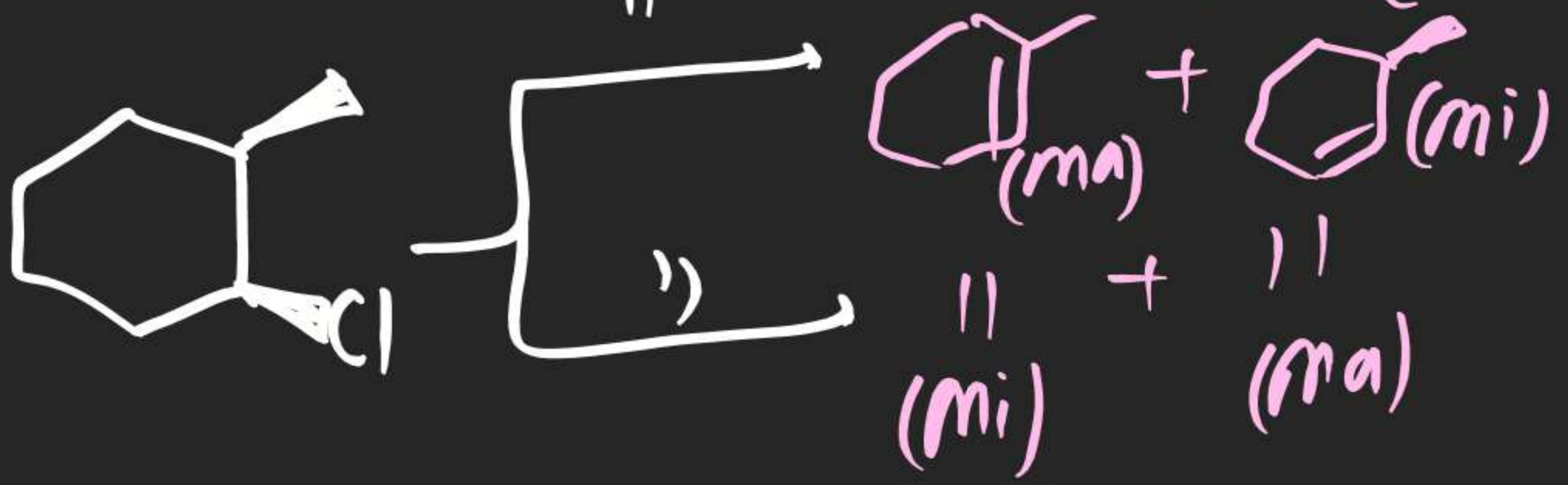
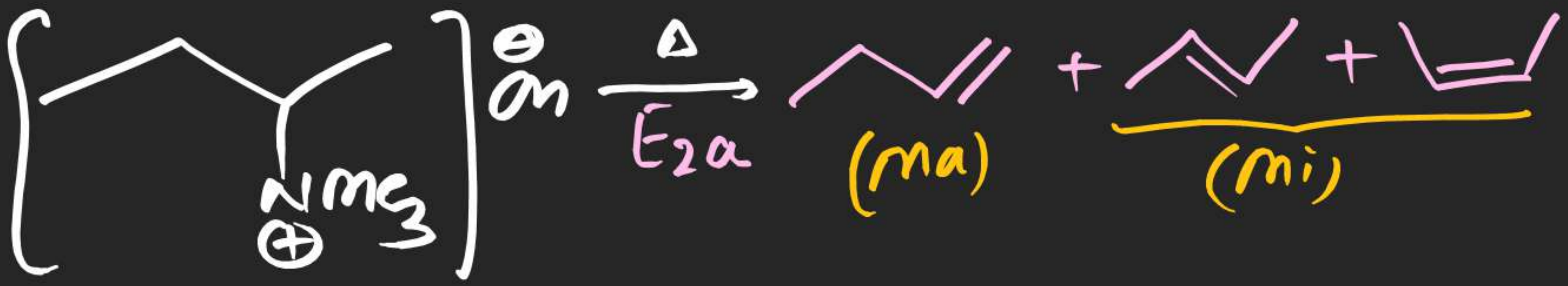


like $(-F, -\overset{\oplus}{N}R_3, -\overset{\oplus}{S}R_2 \cdots\cdots)$

(32) 

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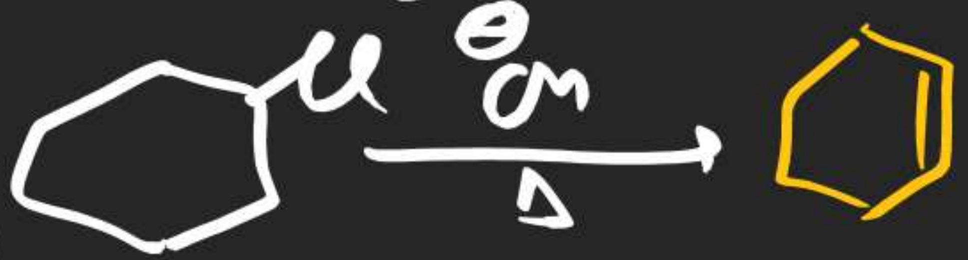
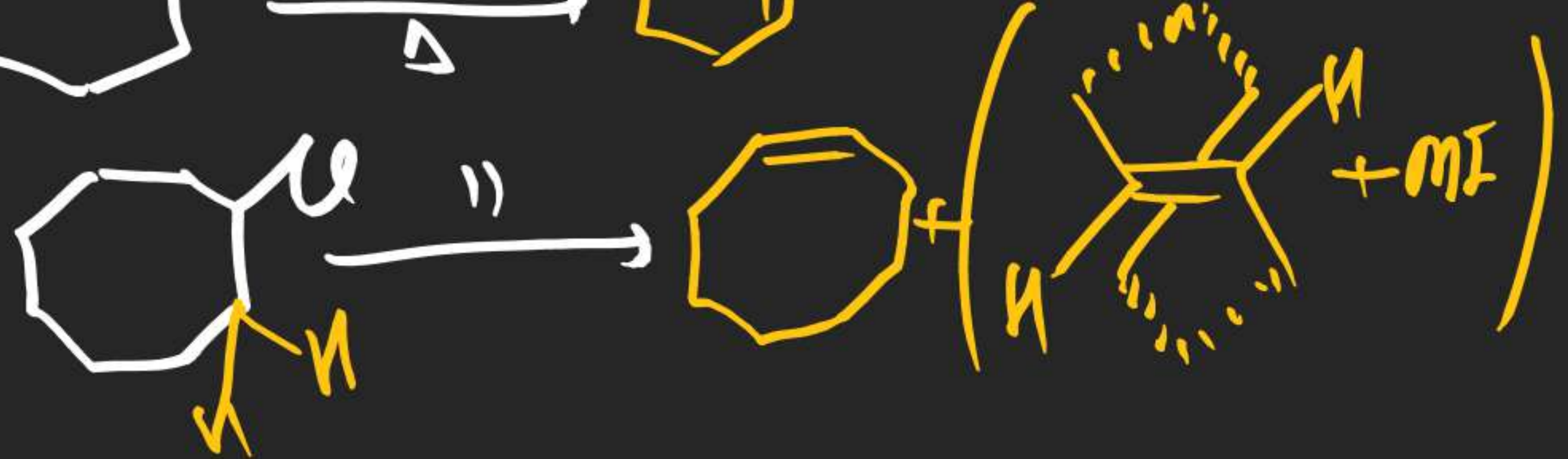
(34)(a) 

(b) 

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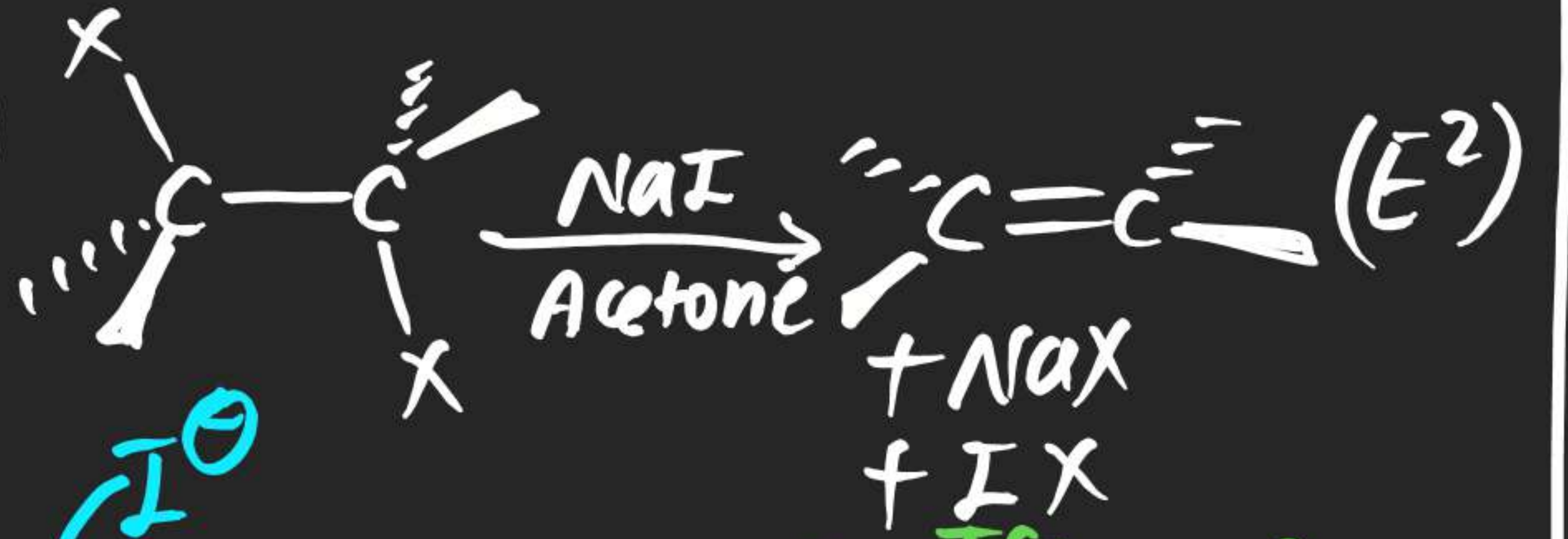
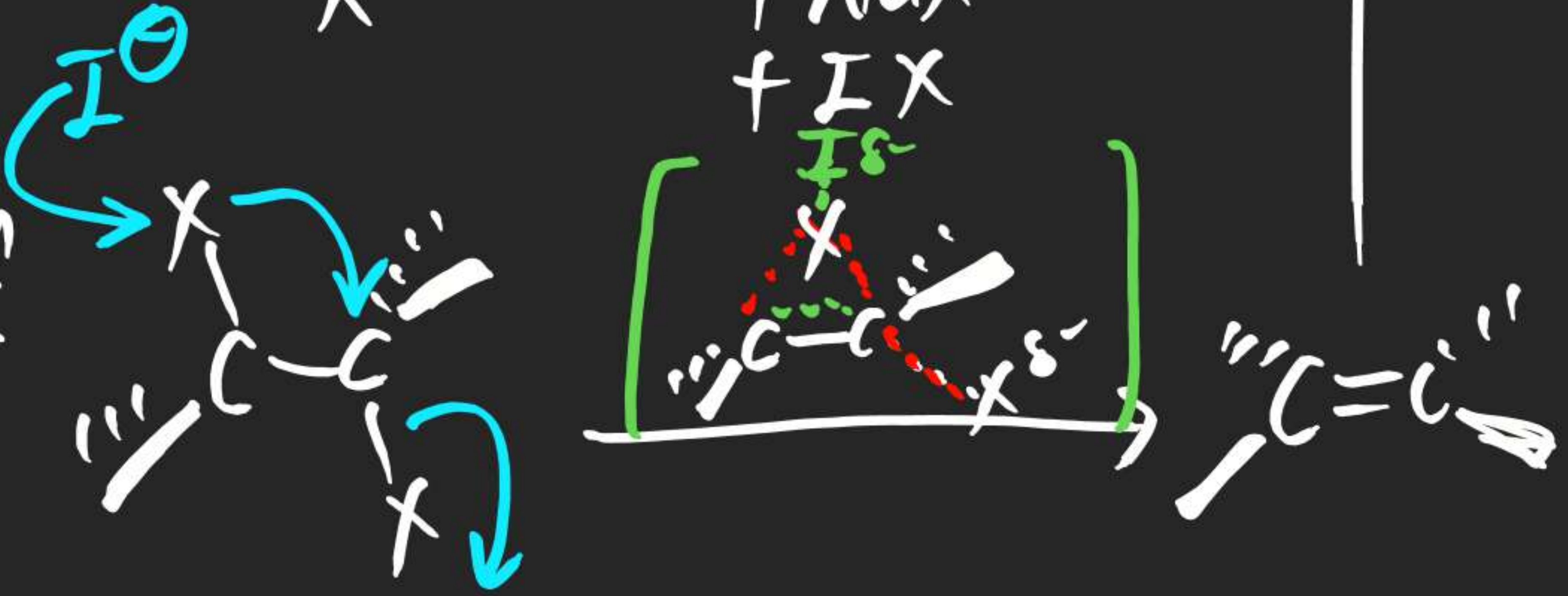
(#) Dehalogention:

⇒ In This Reaction vic-dihalide Compounds are treated with NaI-Acetone or Zn-Dust so that dehalogention takes place & alkene is obtained as a Product.

(1) 

mech^n:



Note (i) Anti Ellimination

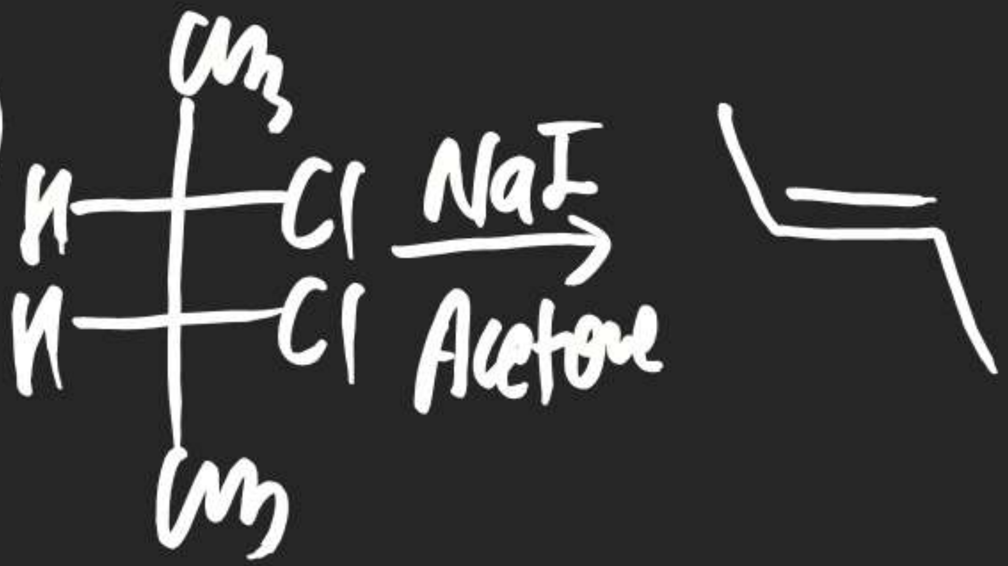
(ii) order of rate of rxn

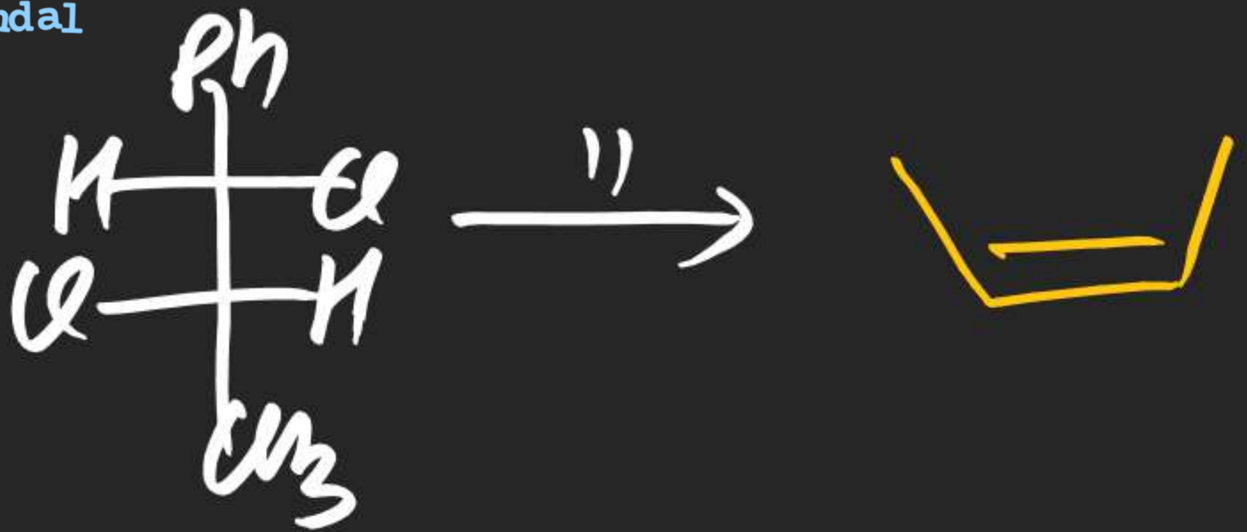
(2) $CH_2Cl-CH_2Cl \xrightarrow[\text{Acetone}]{\text{NaI}} CH_2=CH_2$

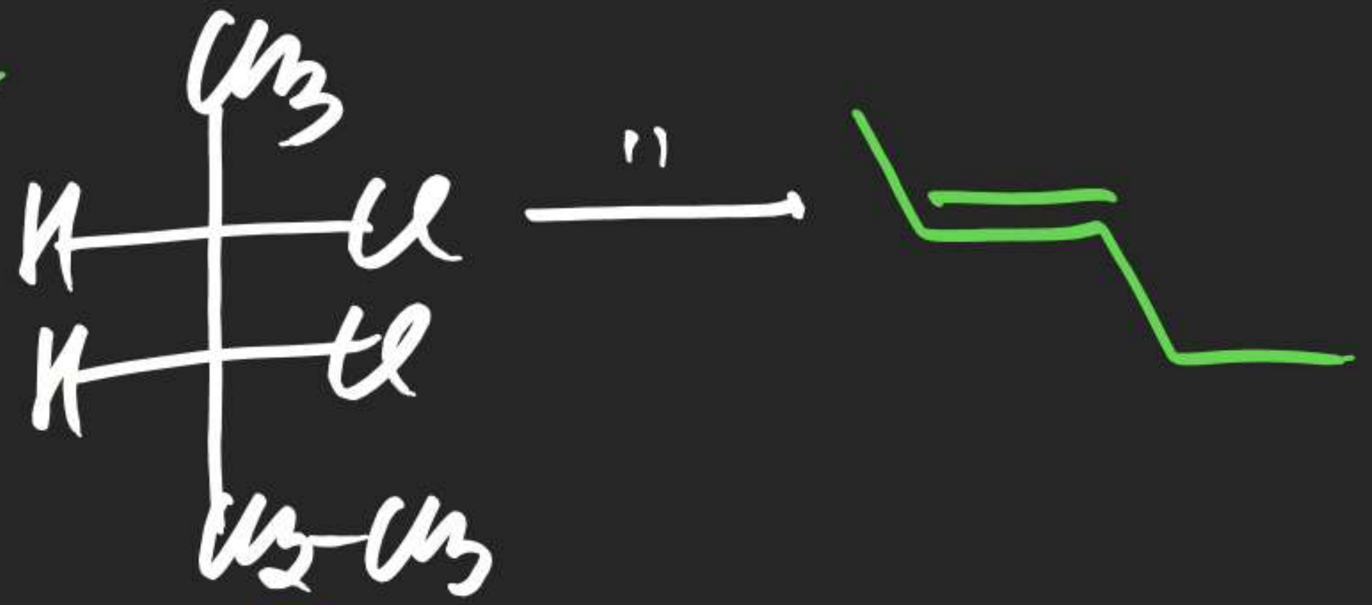
(3) $CH_3-CHCl-CH_2Cl \xrightarrow{\text{"}}$ 

(4) 

(5) 

(6) 

(7)


(8)


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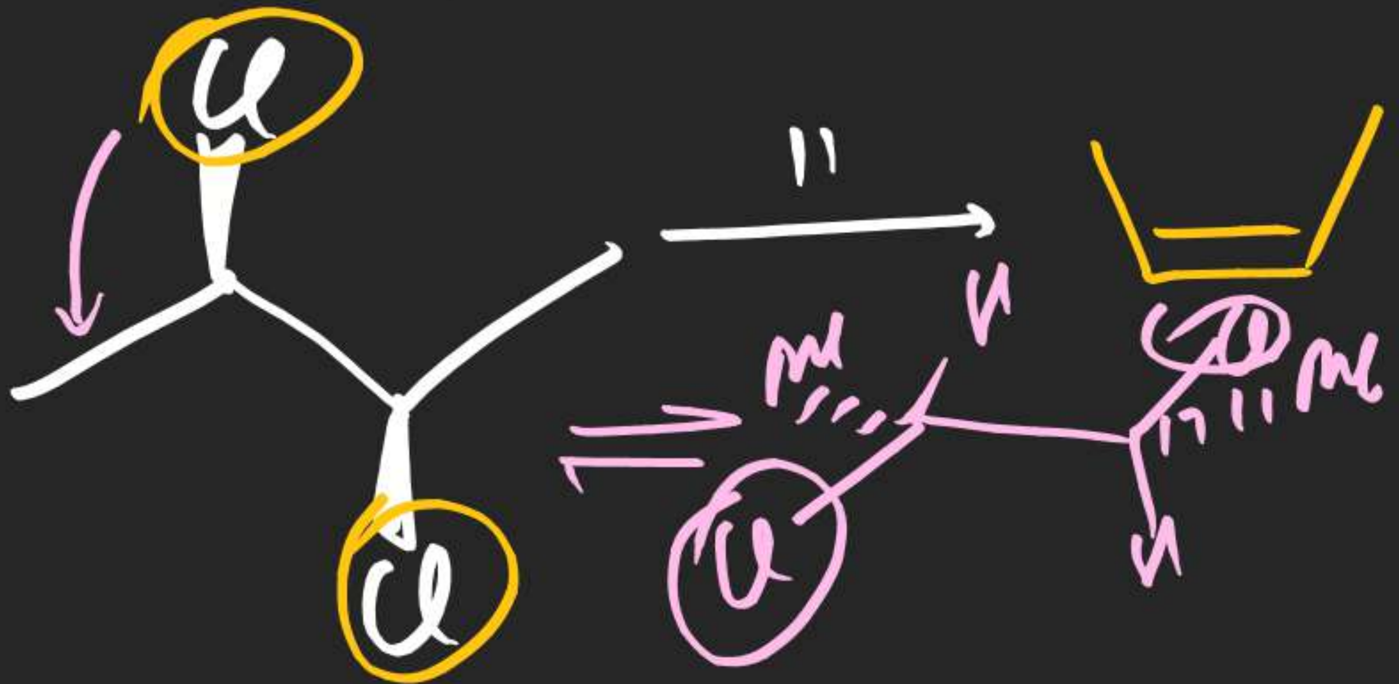

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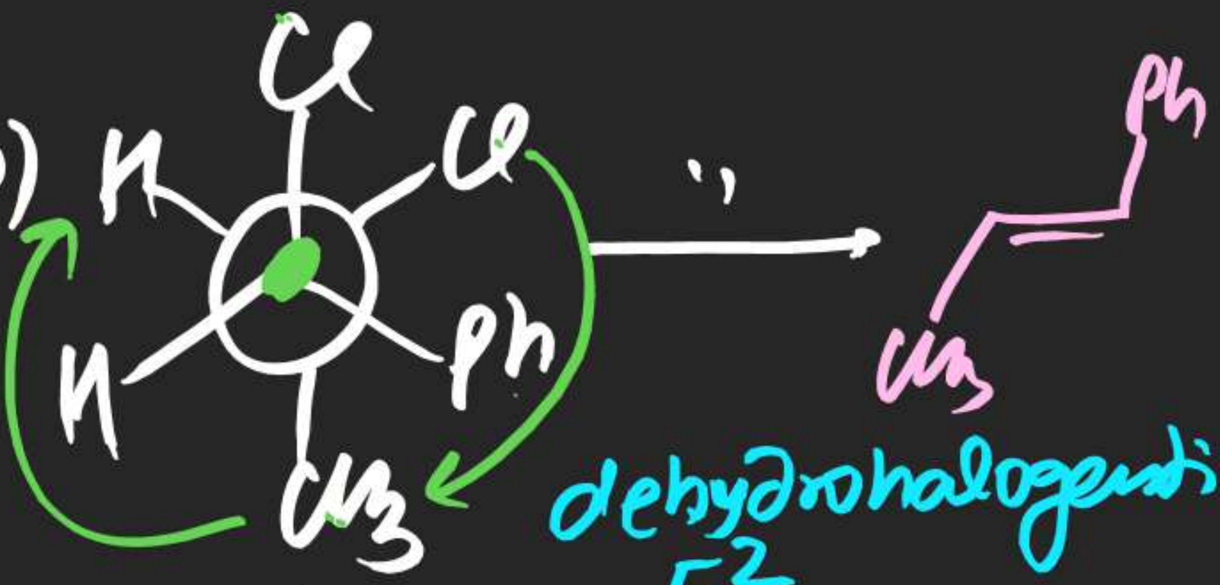


dehydrohalogenation
E^2

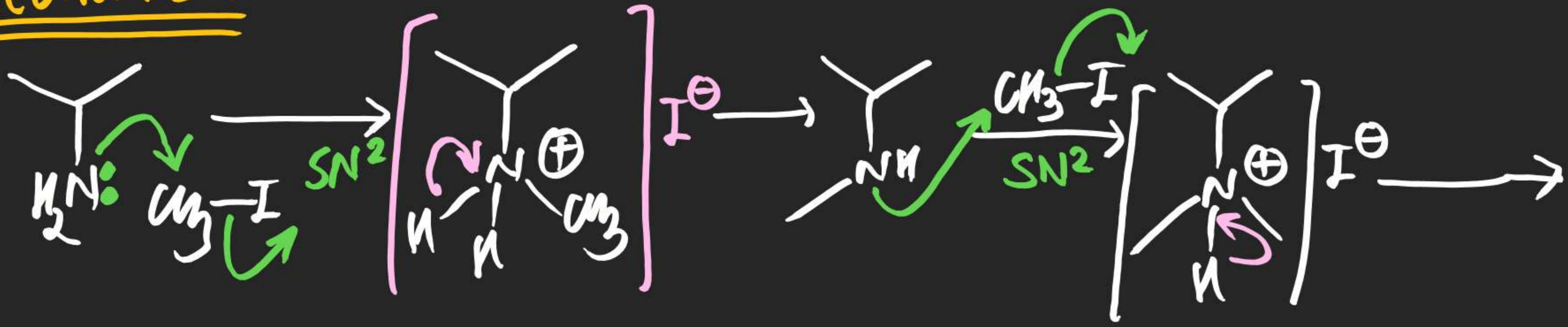
(11)


(E^2)
(dehalogenation)

(#) Hofmann Exhaustive Ellimination:

(1) 

Mechanism



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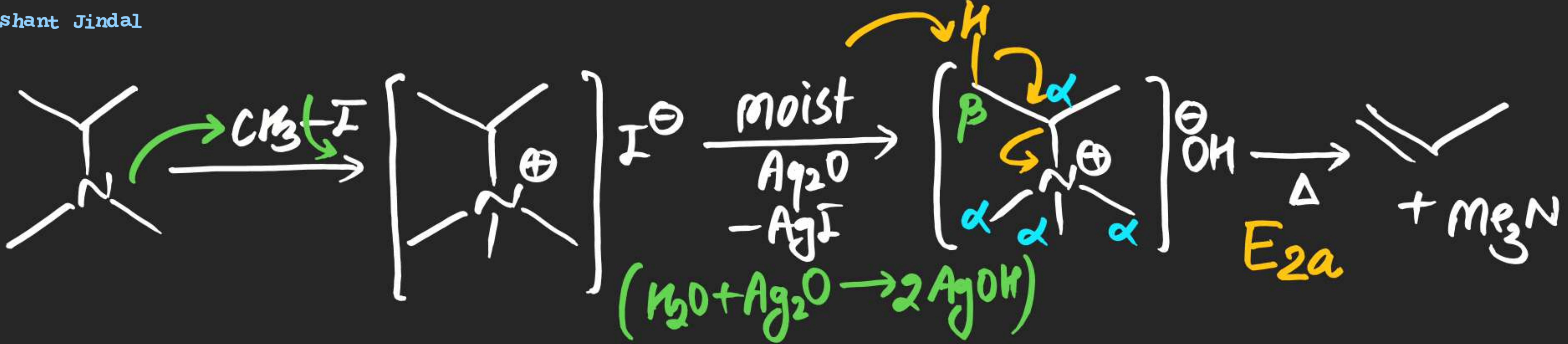

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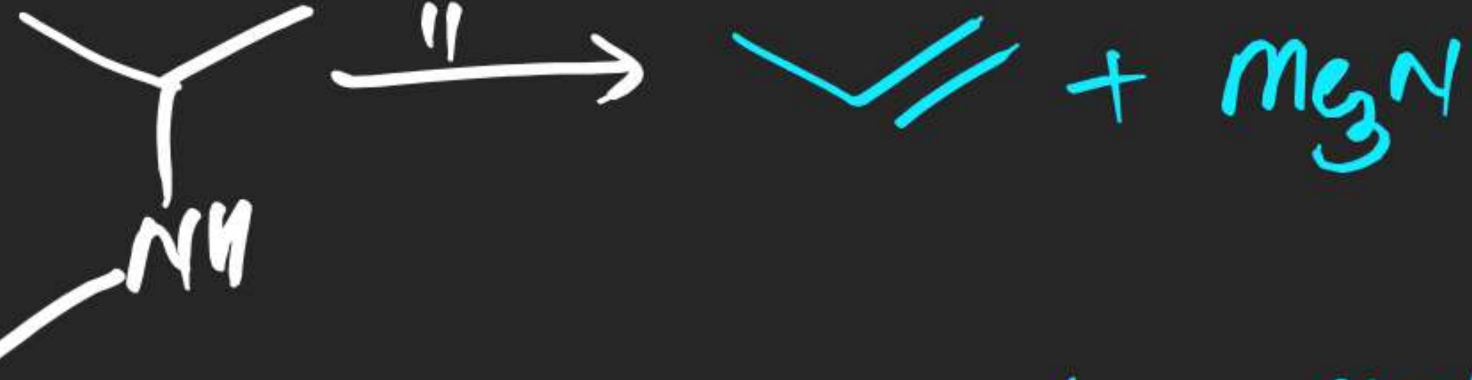

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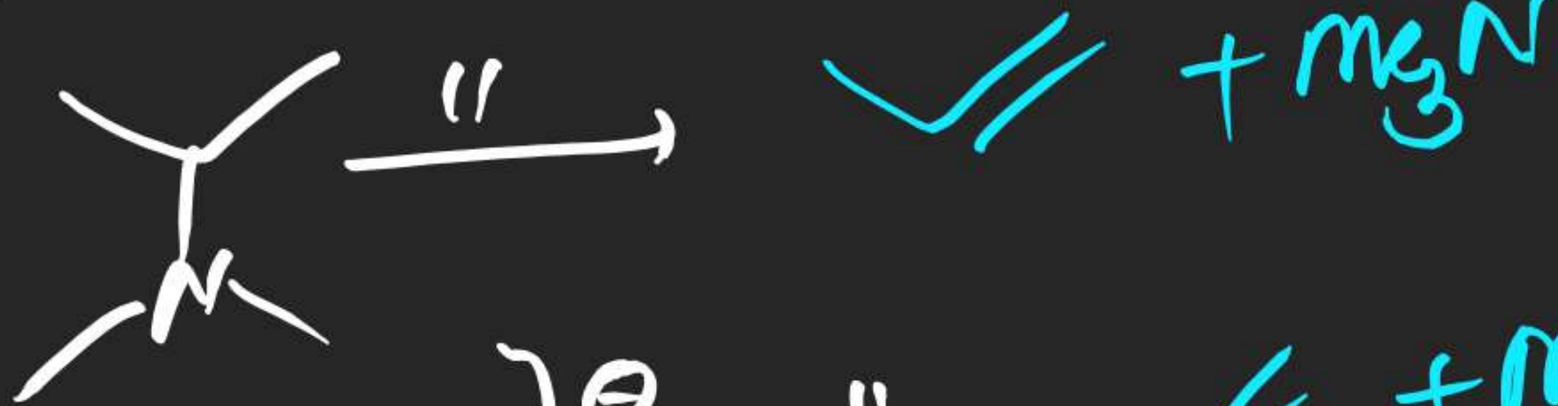
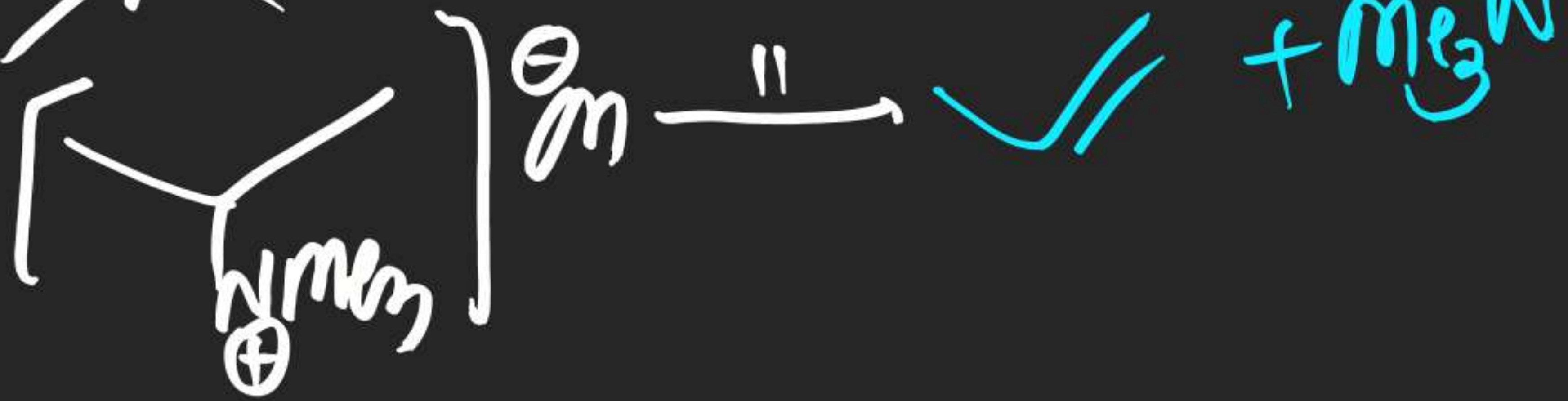
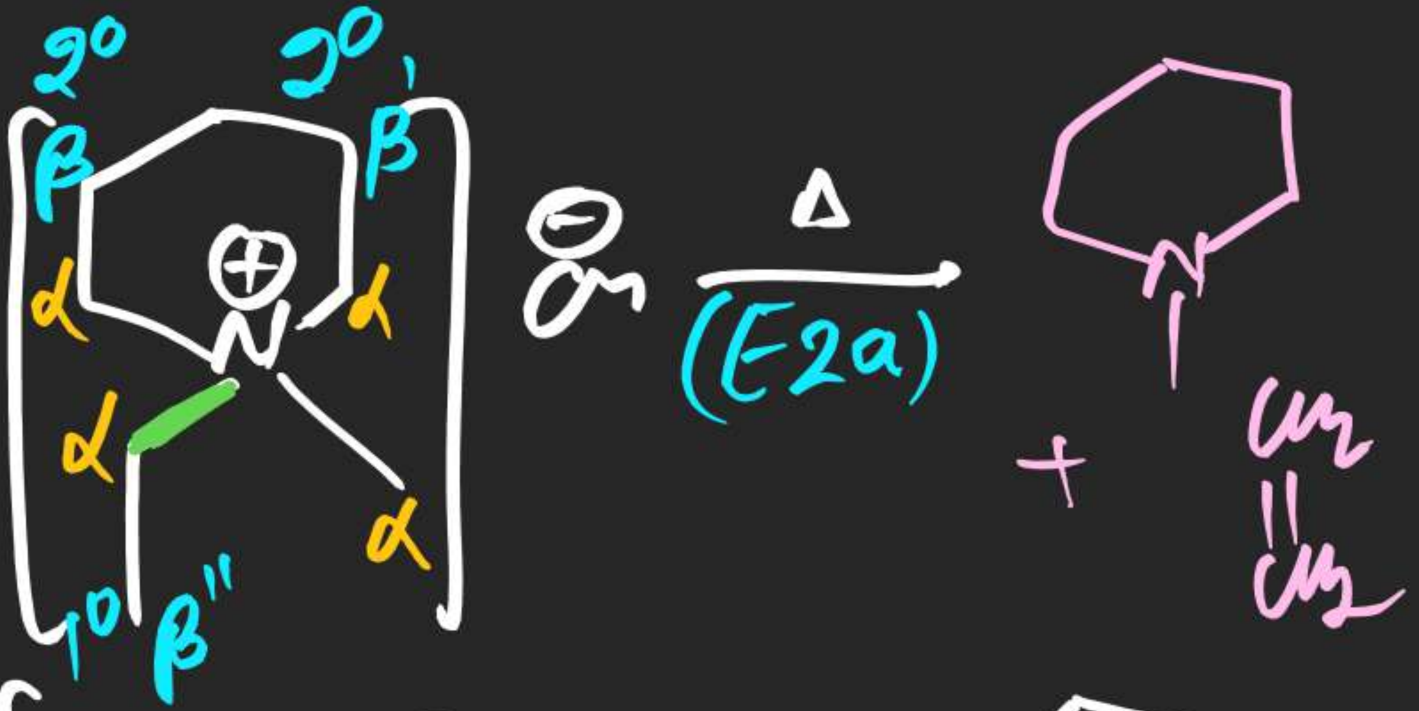


(4)


(5)


β
β
α
α
OH
Δ

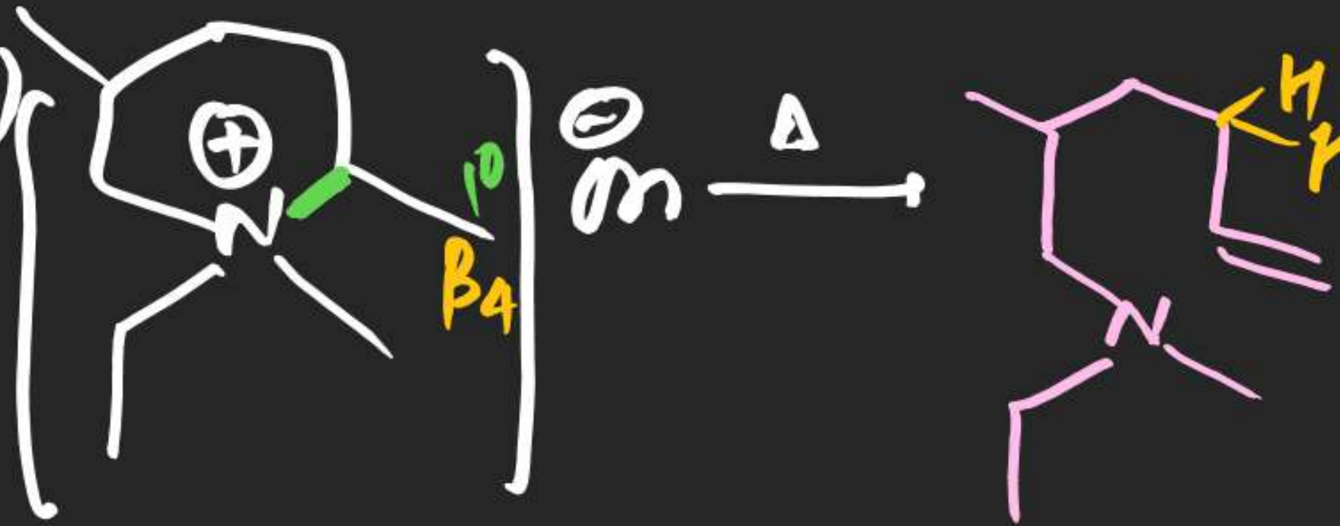
(6)


2°
2°
β
β
α
α
α
α
1°
β''
Δ
(E2a)
$CH_2=CH_2$

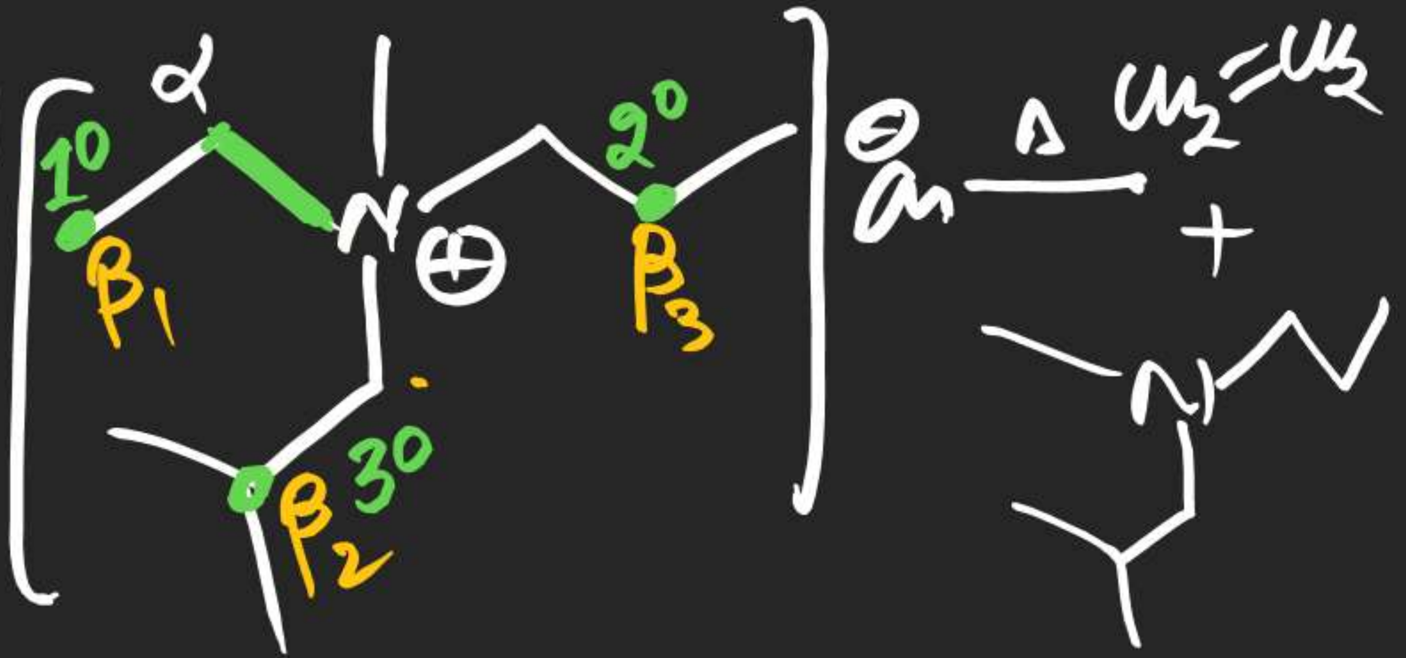
(7)


β
β
α
α
α
α
Δ
NMe_2

(8)


1°
$β_4$
Δ
H
H

(9)


α
1°
$β_1$
2°
$β_3$
$β_2$
3°
Δ
$CH_2=CH_2$

(10)


Δ
$β_2$

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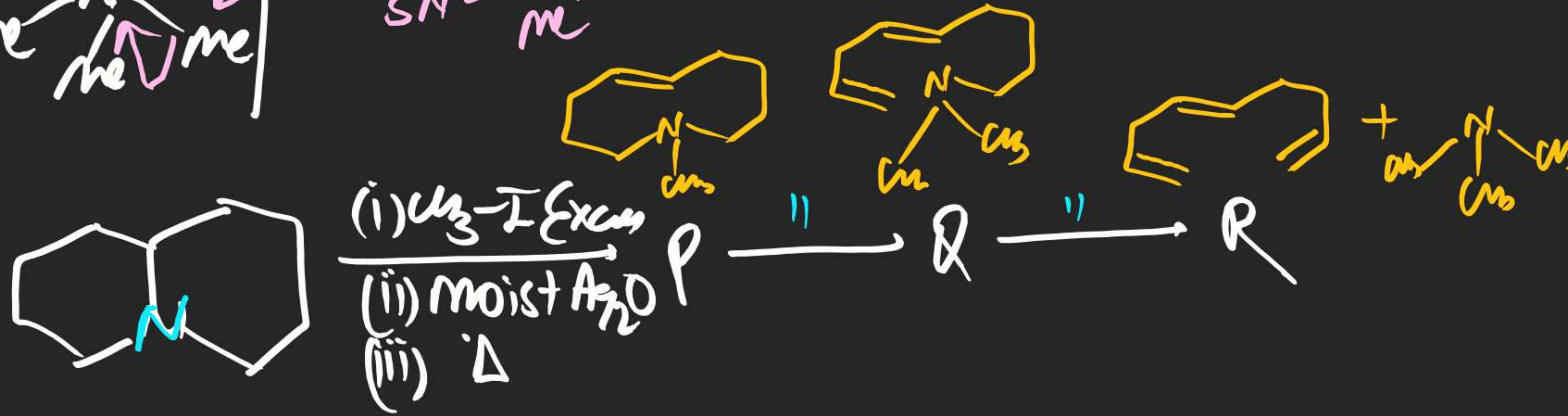
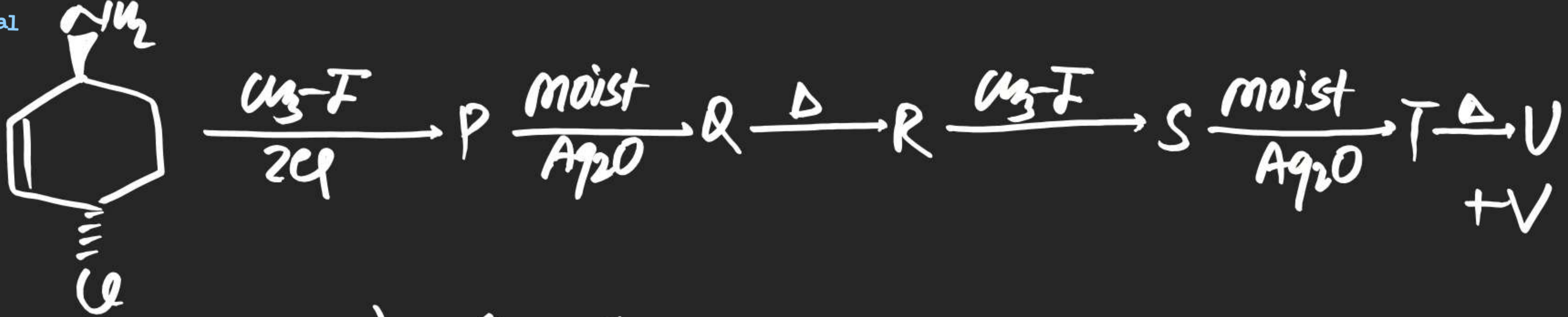
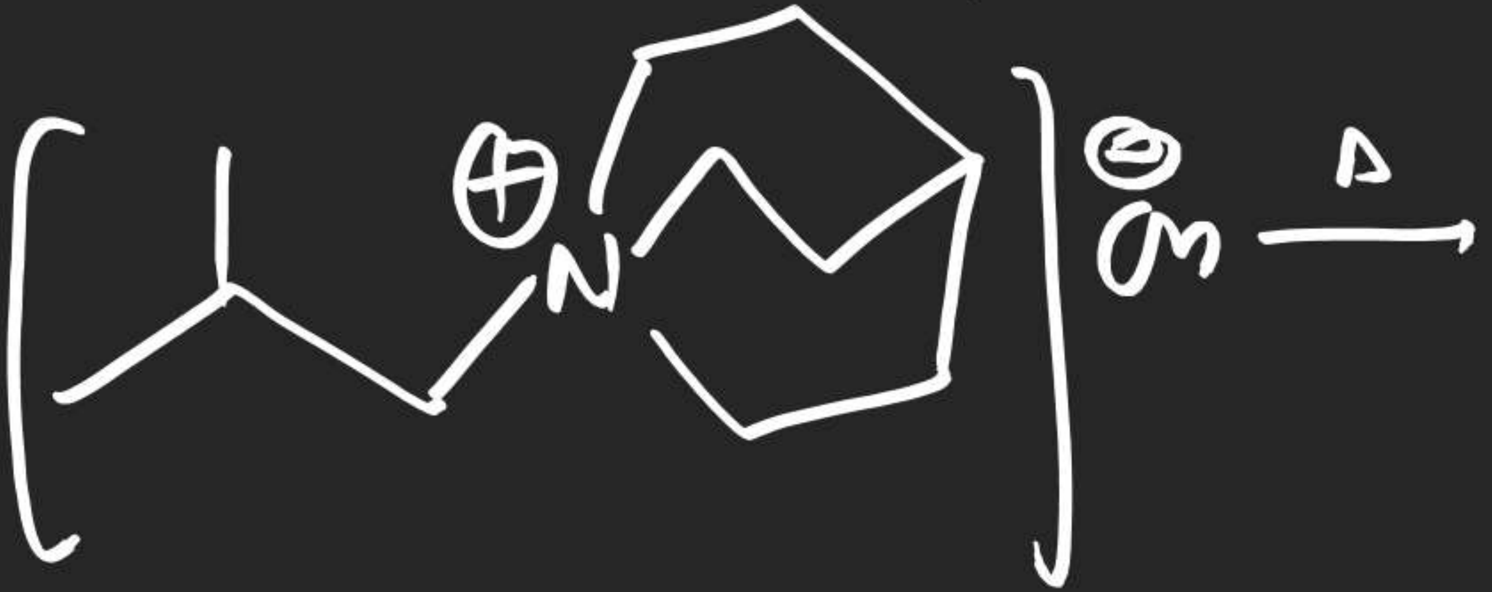
(11) $HO^{\ominus}\left[Me_3\overset{\oplus}{N}-CH_2-CH_2-\overset{\oplus}{N}Me_3\right]\overset{\ominus}{O}H \xrightarrow{\Delta} HC\equiv CH$

(12) $\left[Me_4\overset{\oplus}{N}\right]\overset{\ominus}{O}H \xrightarrow[S_N2]{\Delta} Me_3N + CH_3-OH$

(13) 

(14) 
NH2
Cl
CH3-I
2eq
P
moist
Ag2O
Q
Δ
R
CH3-I
S
moist
Ag2O
T
Δ
U
+V

(15) 
Ph
N
⊕
⊖
OH
Δ

(16) 
⊕
N
⊖
OH
Δ

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(#) Application of E^1:

(1) Dehydration of Alcohol:

(1)

(2)

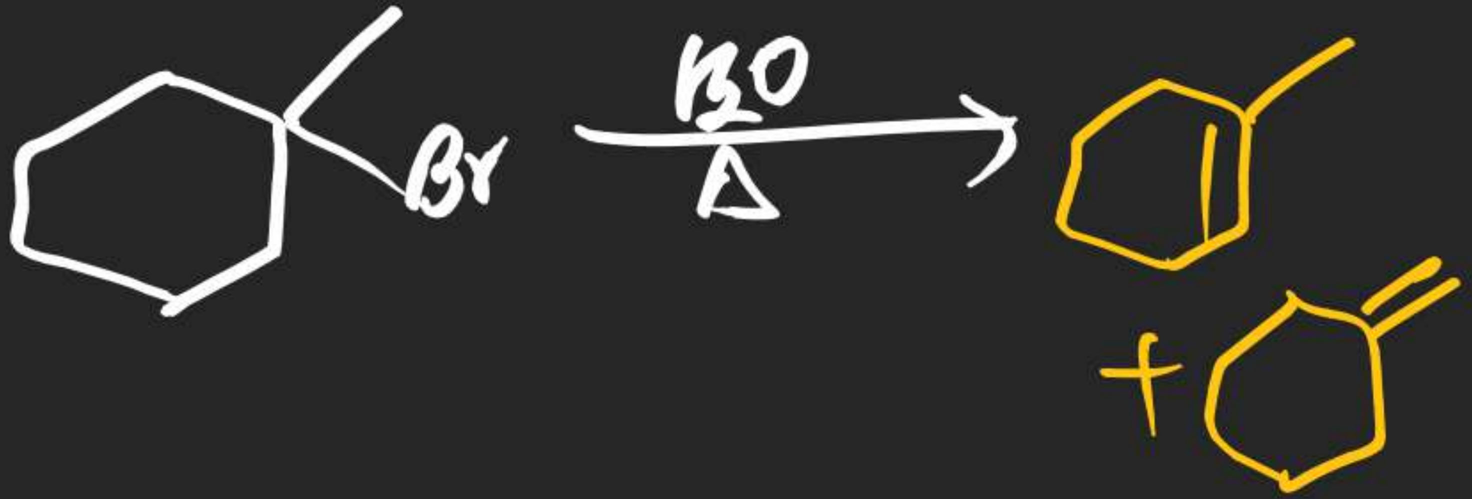
(3)

(2) Ellimination of alkyl halide

~~SN1~~ E1

(4)

(5)



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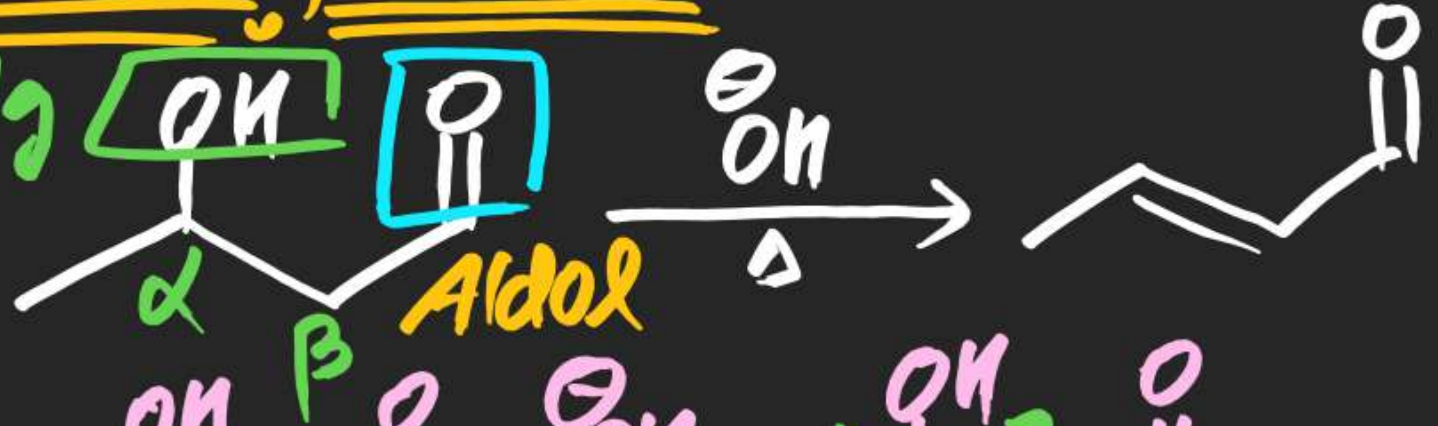
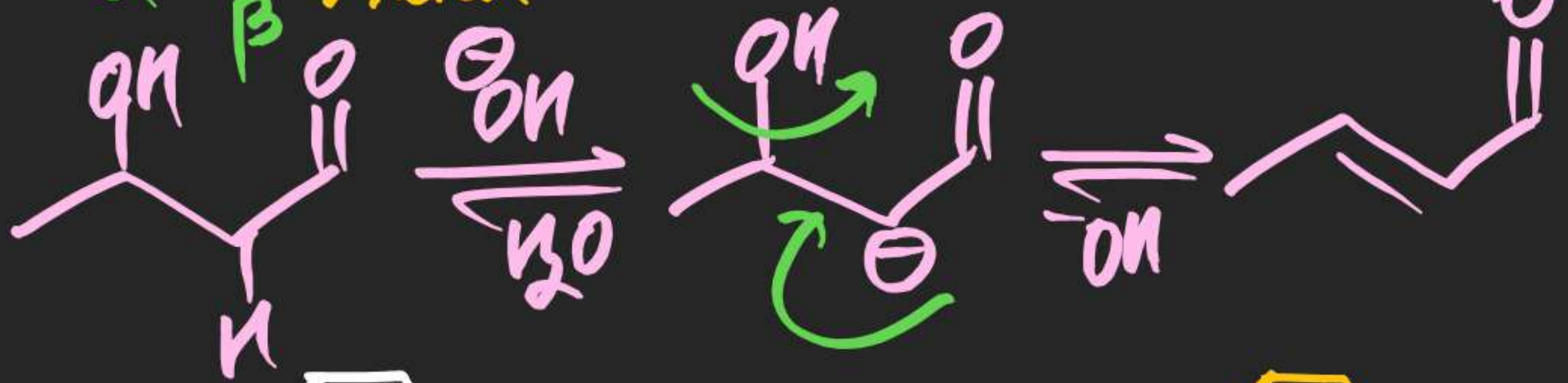
Application of E_1CB :-

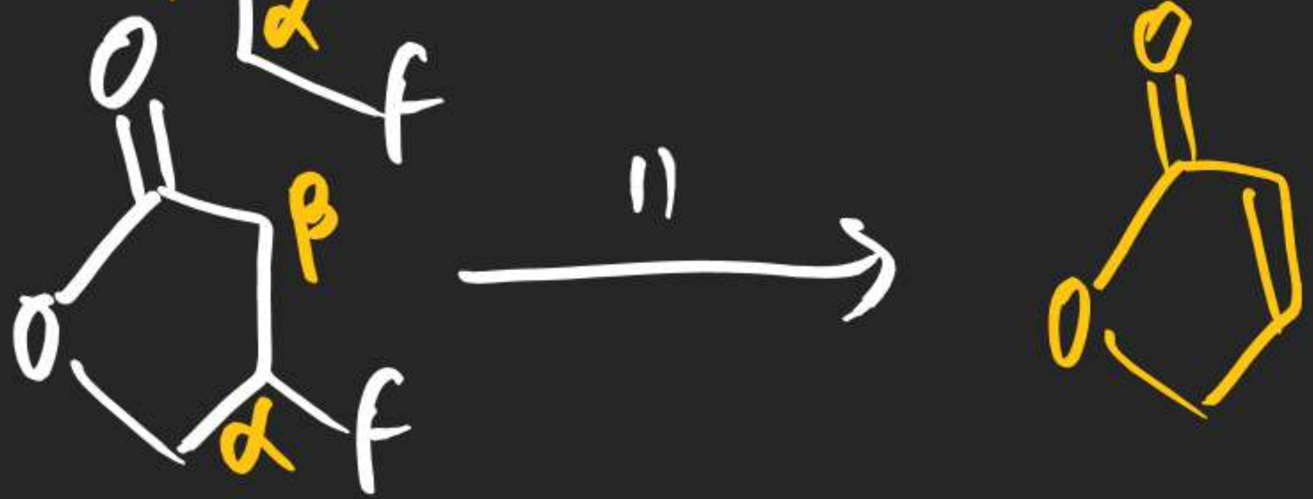
Bad lg

(1) 

mech^n :-



(2) 

(3) 

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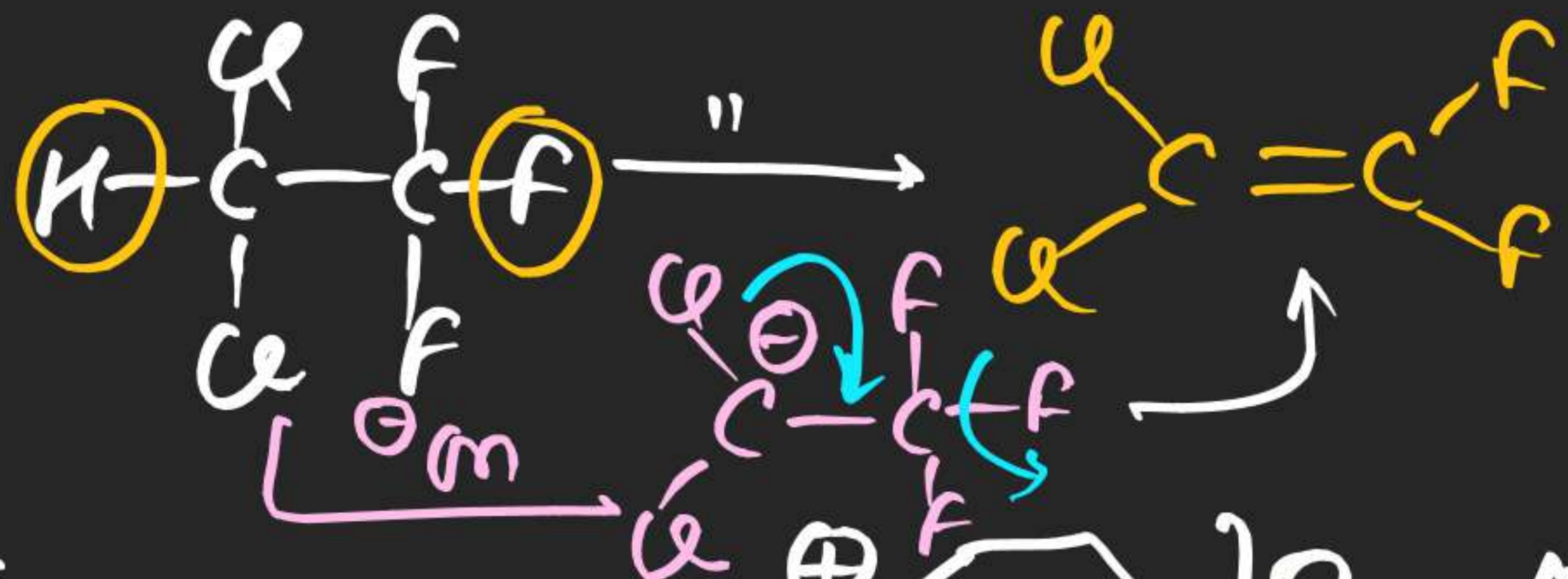
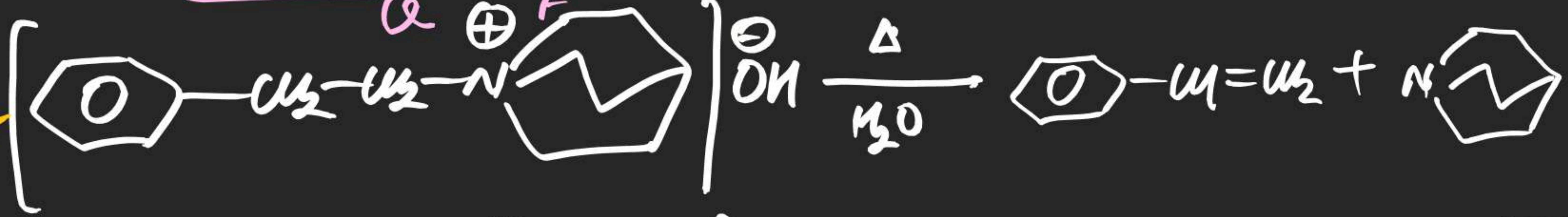
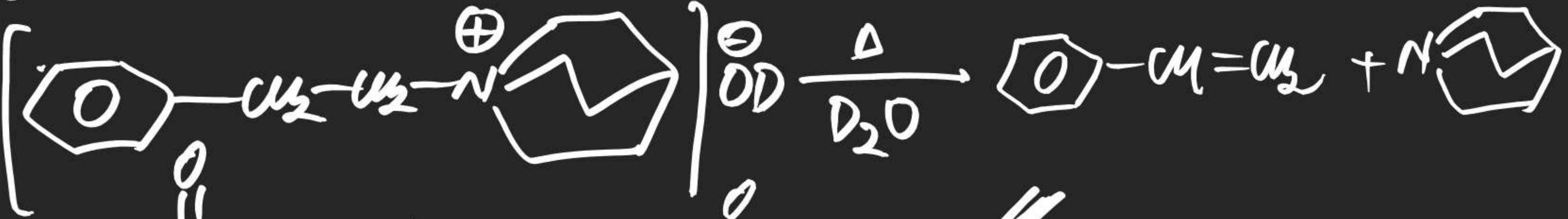
(4)



(5)



(6)



(7)

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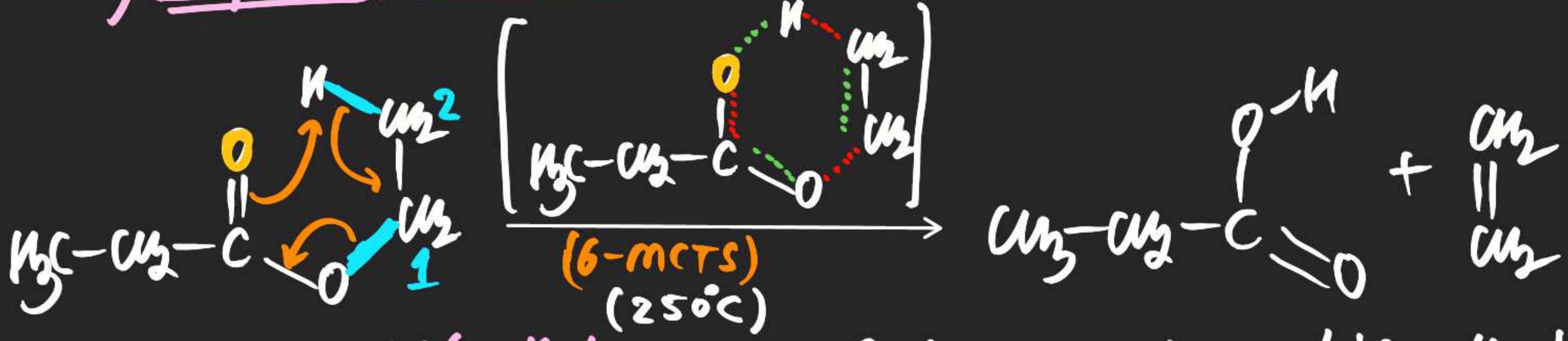
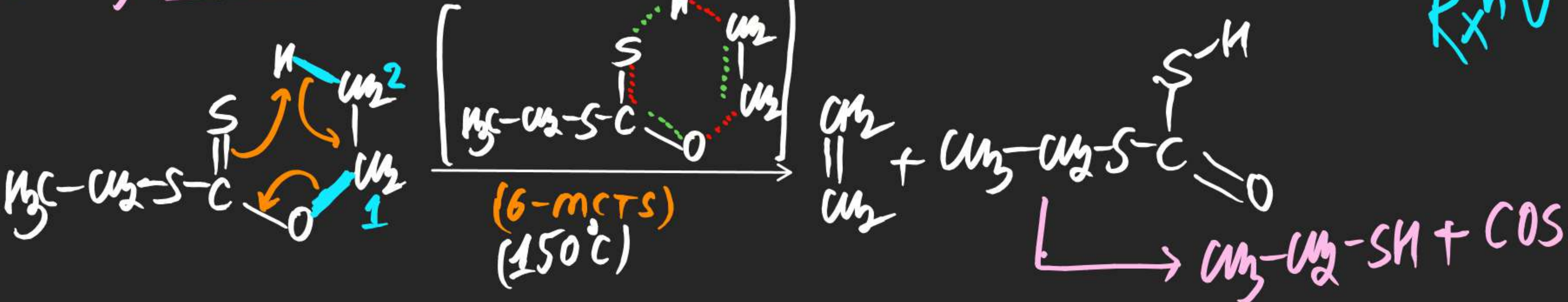
E^i mechanism :- (Intramoleculer Ellimination) (Syn Ellimination)

(1) Pyrolysis of Ester : Thermal decomposition of ester



(2) Pyrolysis of Xanthate Thermal decomposition of Xanthate (Chugav Rxn)



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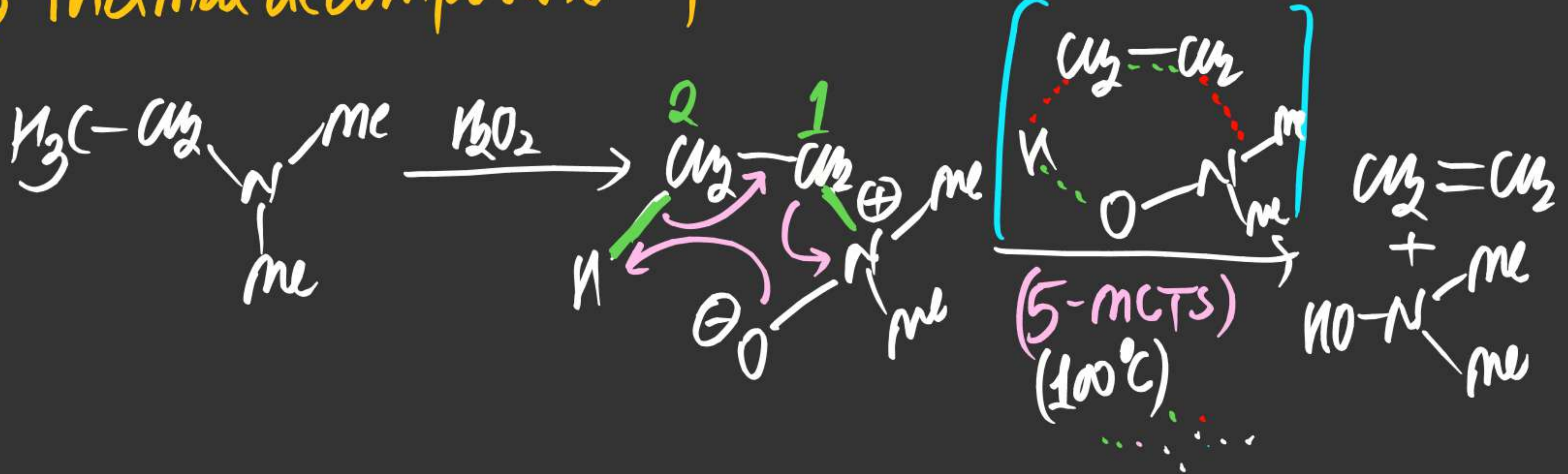
Note (i) 6-MCTS is involved

(ii) Syn Ellimination

(iii) Hofmann alkene dominates over Saytzeff.

(3) Pyrolysis of Amine Oxide (Cope Ellimination):-

⇒ Thermal decomposition of Amine oxide



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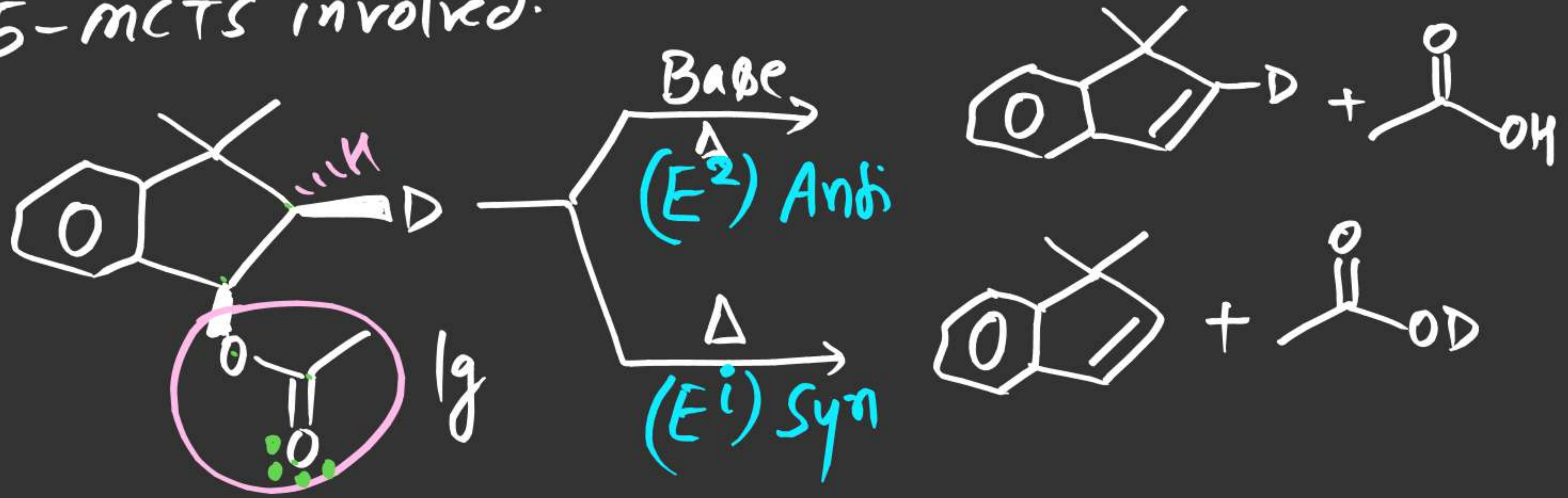
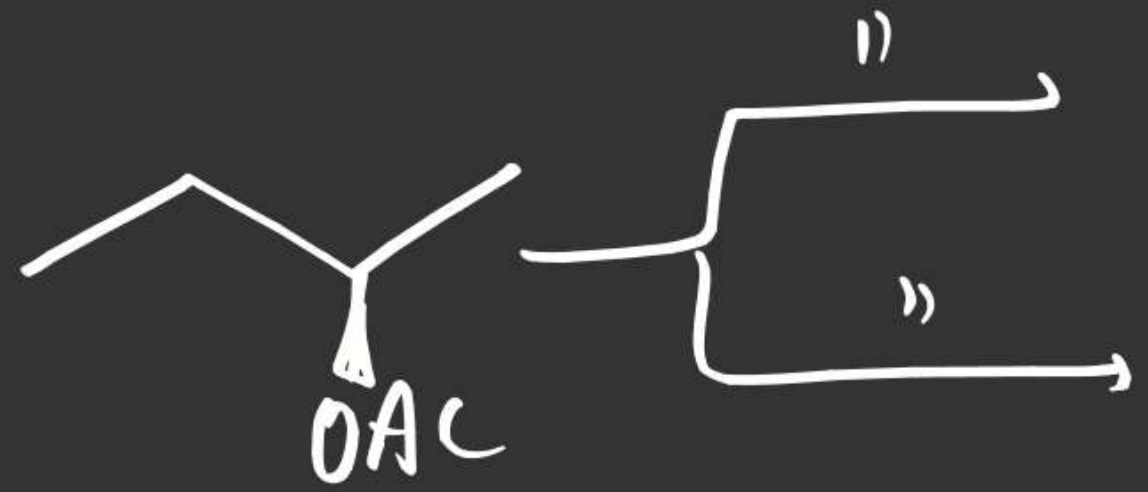
Note: 5-mCTS involved.

(1)



(2)



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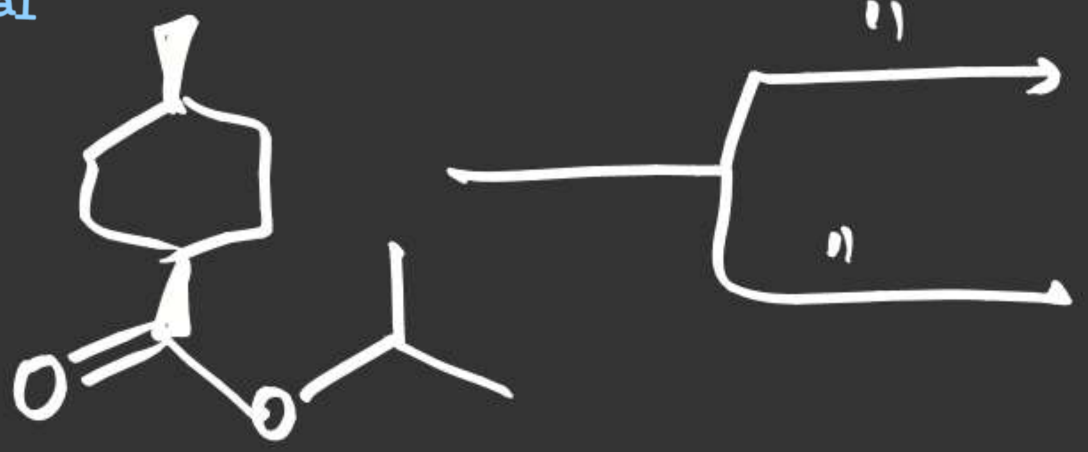
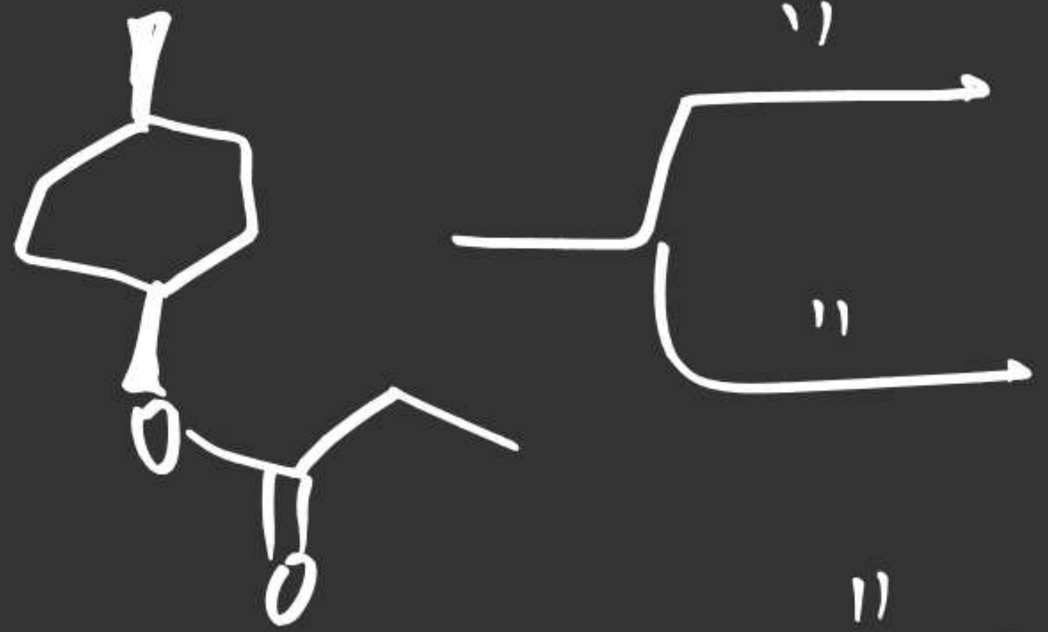
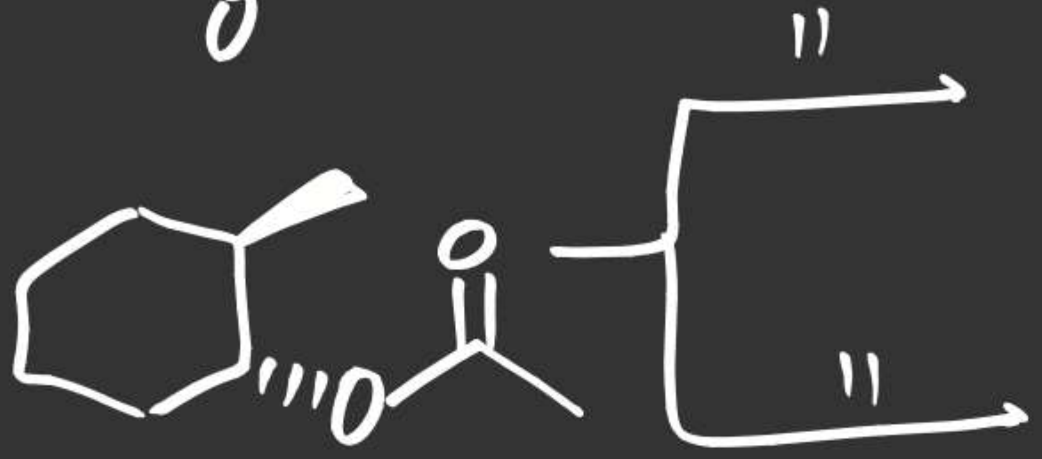
(3)



(4)

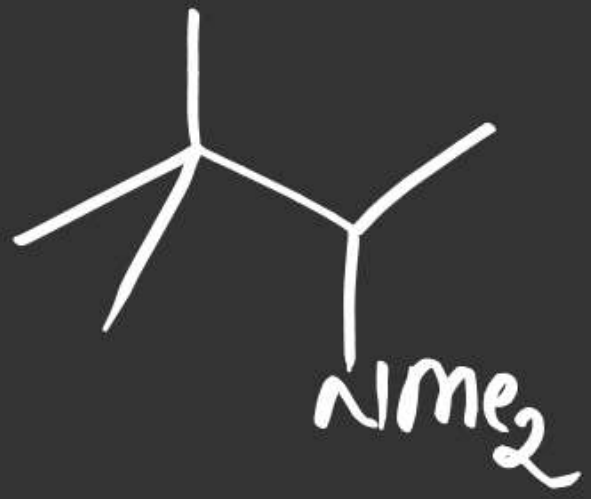


(5)



(6)  $\xrightarrow[\text{(ii) } \Delta]{\text{(i) } H_2O_2}$

(7) $CH_3-CH_2-OH \xrightarrow[\text{metal}]{Na} P \xrightarrow{CS_2} Q \xrightarrow{CH_3-\overset{*}{C}H_2-I} R \xrightarrow{\Delta} S + T$

(8)  $\xrightarrow[\text{(ii) } \Delta]{\text{(i) } H_2O_2}$

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Substitution vs Ellimination

Note:- (i) CH_3–lg cmd always show S_N2.

(ii) Branching favors ellimination $R\times^n$.

(iii) higher Temp ————————————————.

(iv) Aq. NaOH or Aq. KOH $\Rightarrow$ S_N2

(v) Alc. NaOH or Alc. KOH $\Rightarrow$ E^2

(vi) Use of Bulkier Base favors E^2 Product in Expanse of S_N2 product.

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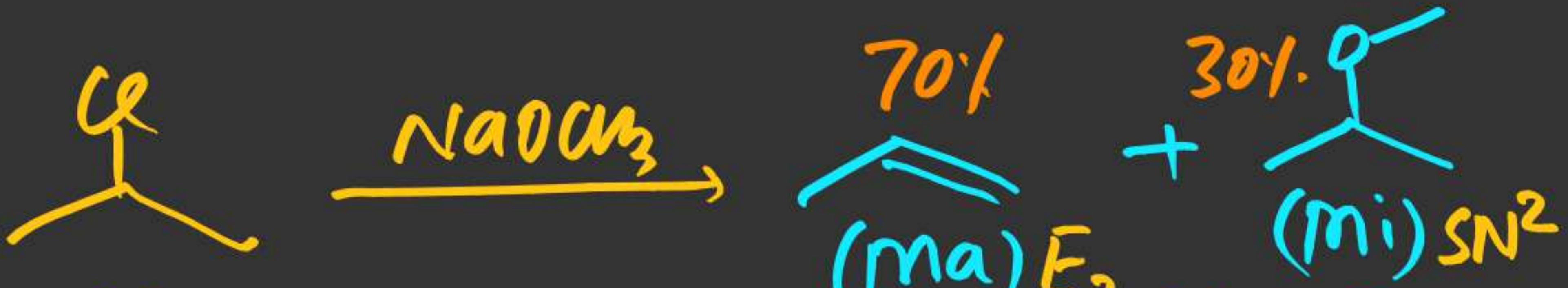
(1)



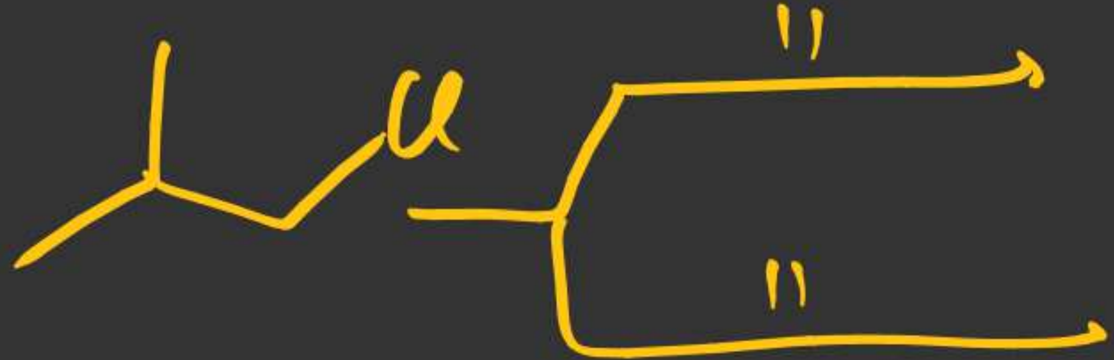
$[E_2] > [SN^2]$

(2)

$[E_2] >> [SN^2]$

(3)

(4)



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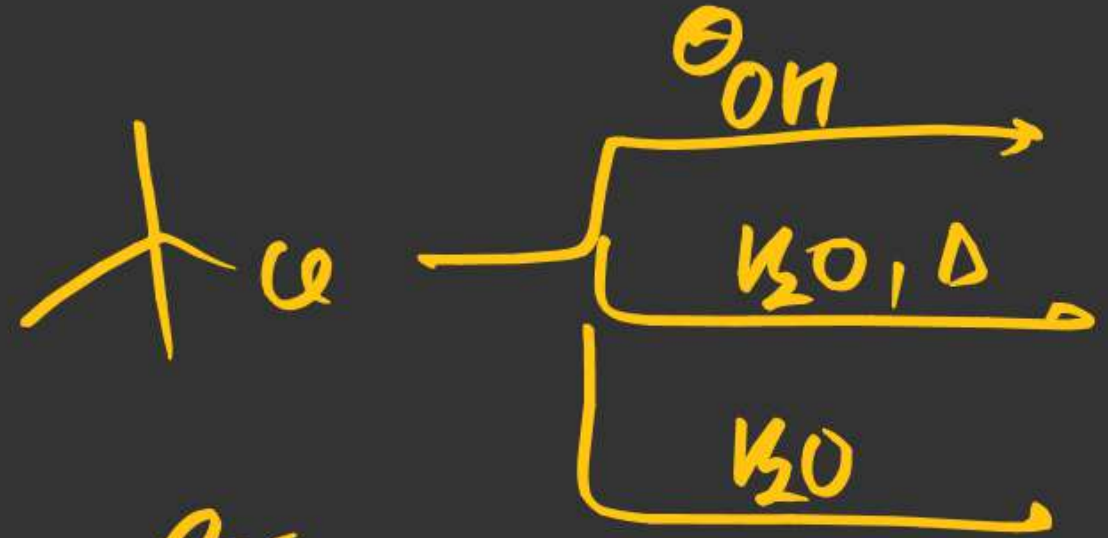
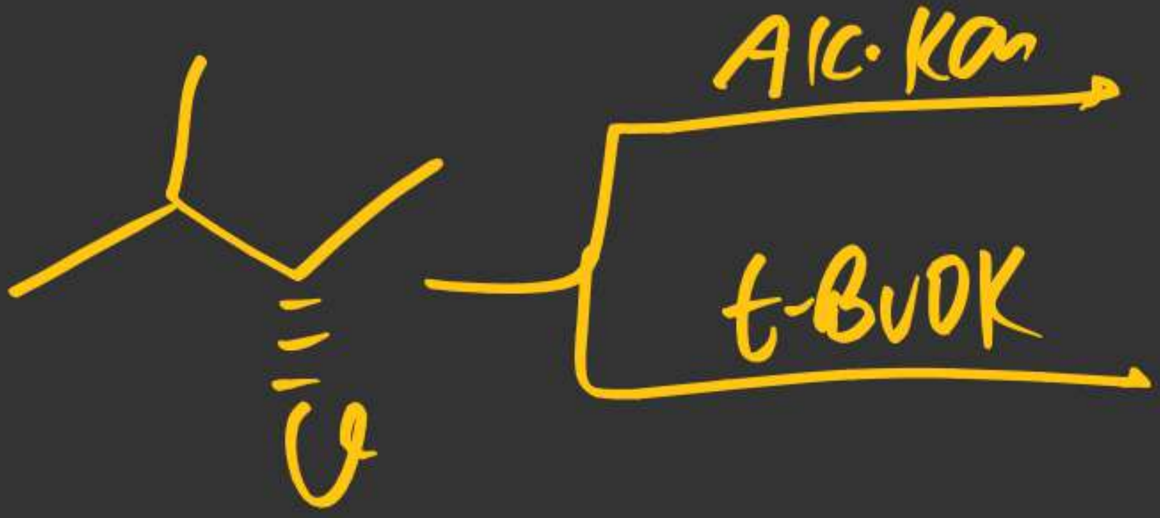


(6)

(7)

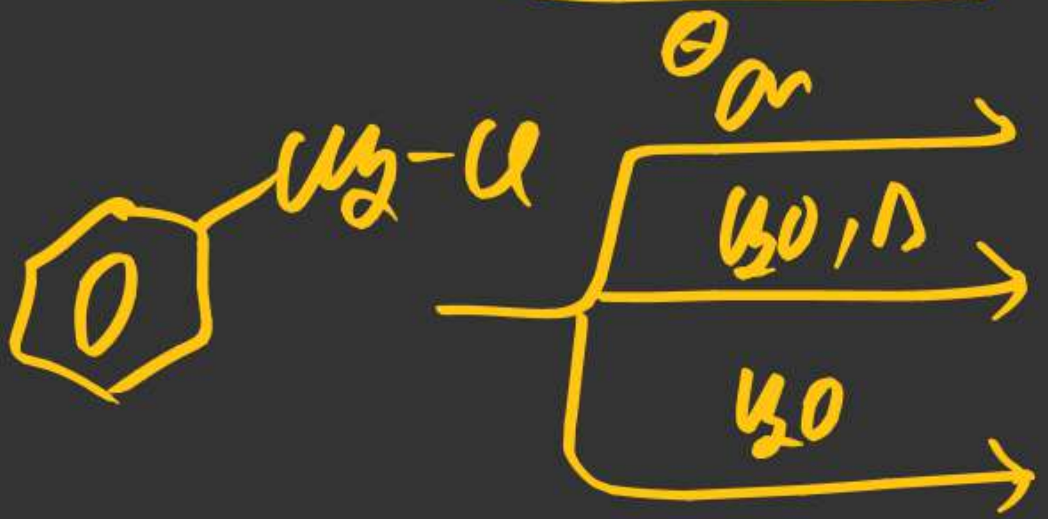


(8) $CH_3-Cl \xrightarrow{\overset{\ominus}{O}H}$

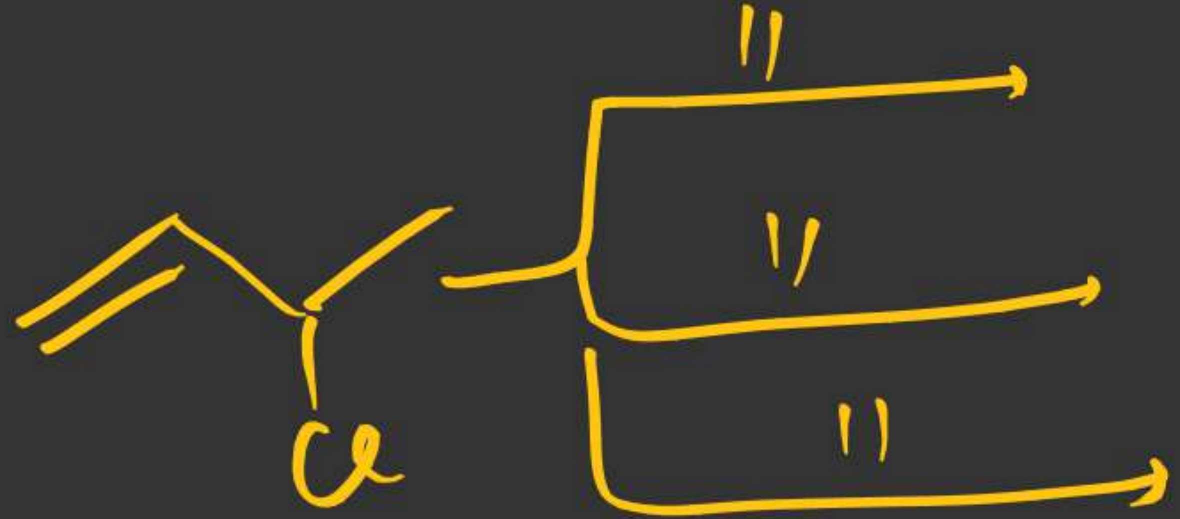
$CH_3-Cl \xrightarrow{H_2O,\ \Delta}$

$CH_3-Cl \xrightarrow{H_2O}$

(9)



(10)



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Carbonyl Compound

(*) Nucleophilic addⁿ on $>C=O$ of
H_2N-Z
HNZ_2
ROH
H_2O
HCN
$NaHSO_3$

(*) Reduction Reaction [RMgX, $LiAlH_4$, $NaBH_4$, DIBAL, B_2H_6, Clemenson Red. Wolf K. / Red P/HI / H_2, Cat / N_2H_4, H_2O_2 / Na-EtOH ...

(*) Oxidation Reaction [$K_2Cr_2O_7$, PCC, PDC, O_3, Cold $KMnO_4$, Tollen's Fehling ------]

(*) Named Reactions [Haloform, Aldal, Cannizaro, Perkin ------]