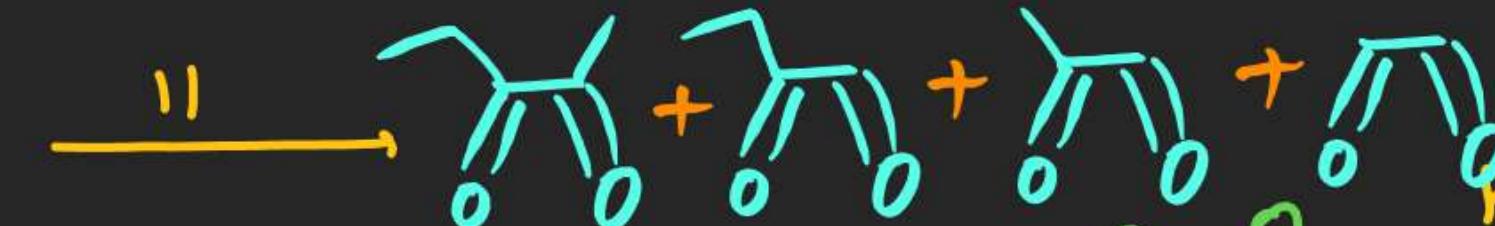
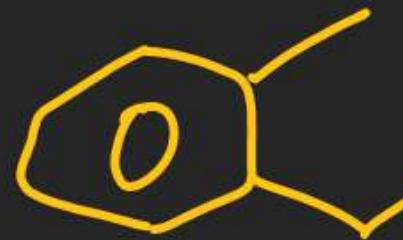
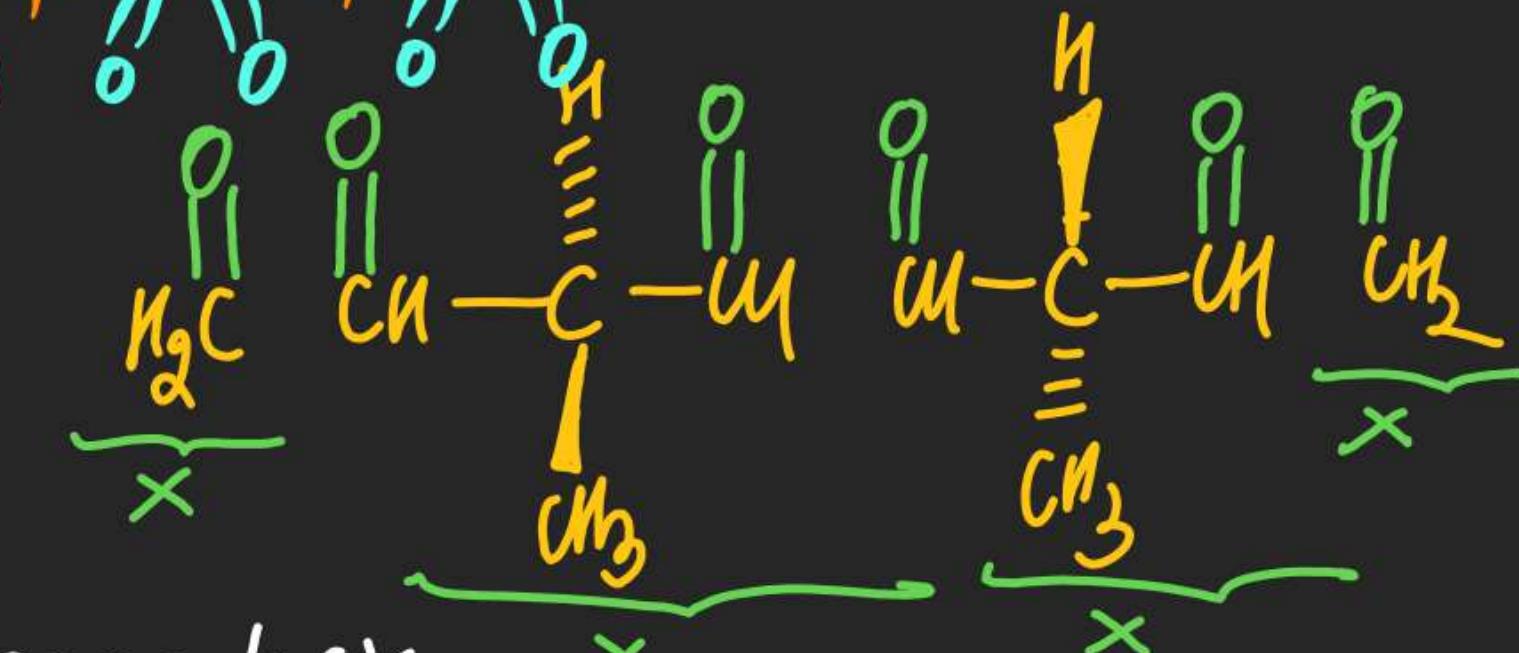


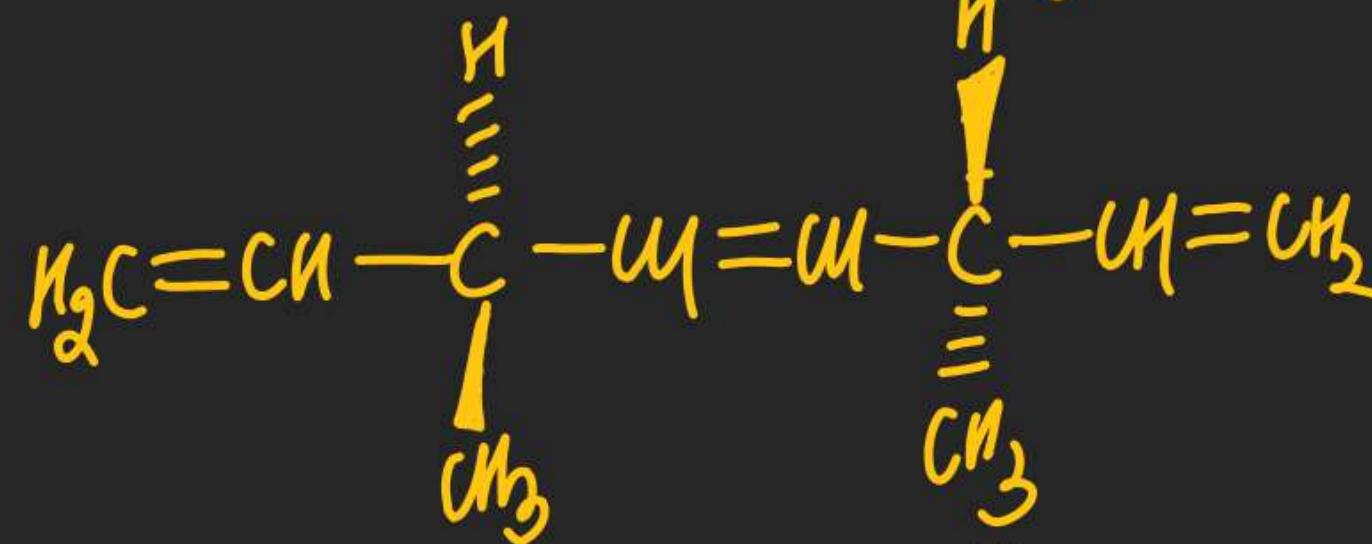
(26)



(27)



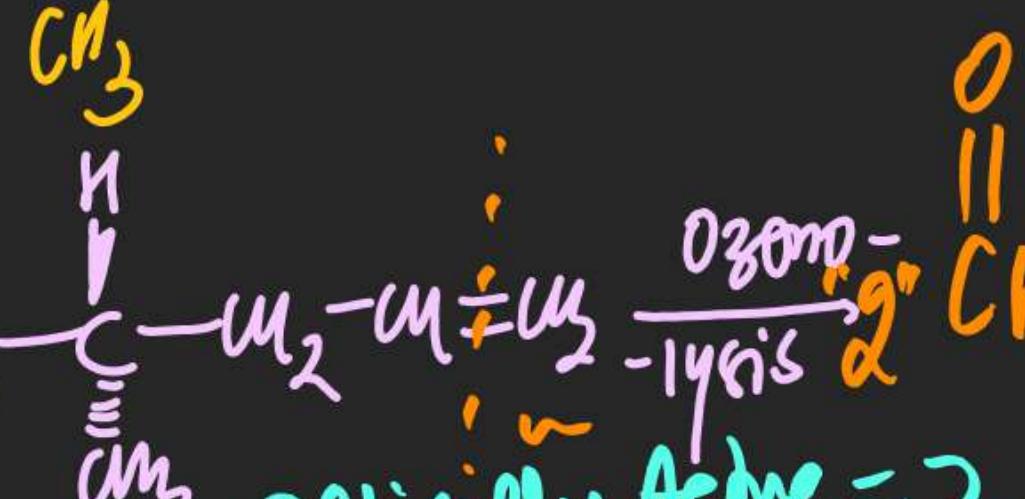
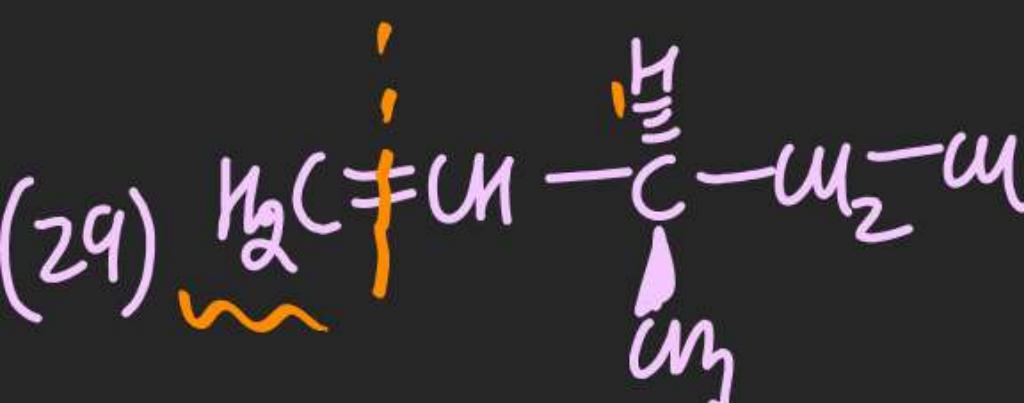
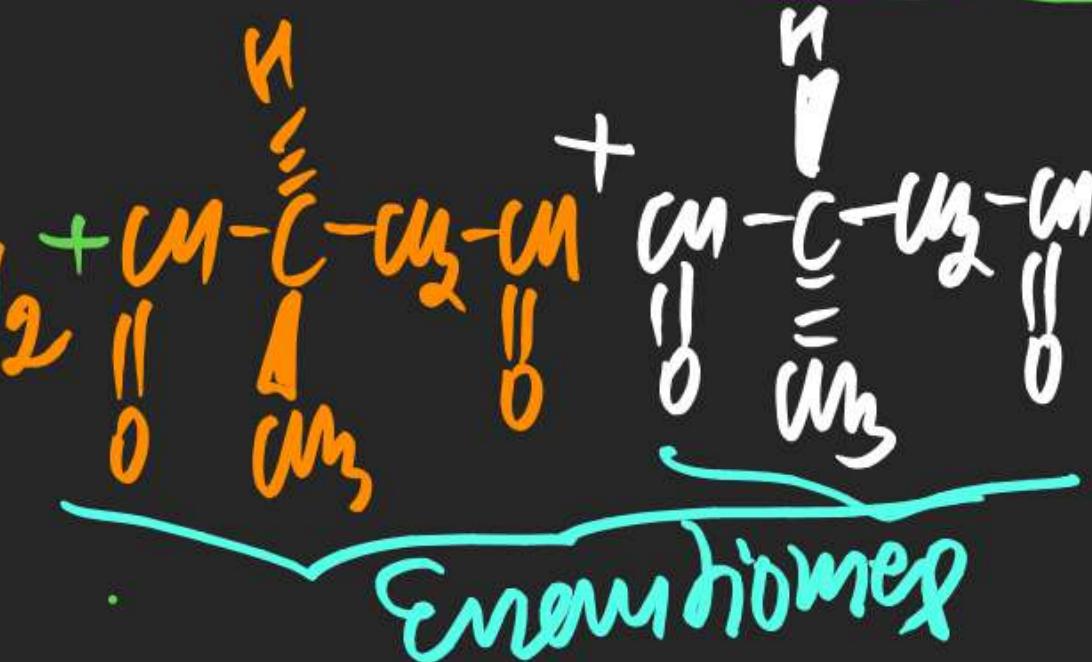
(28)

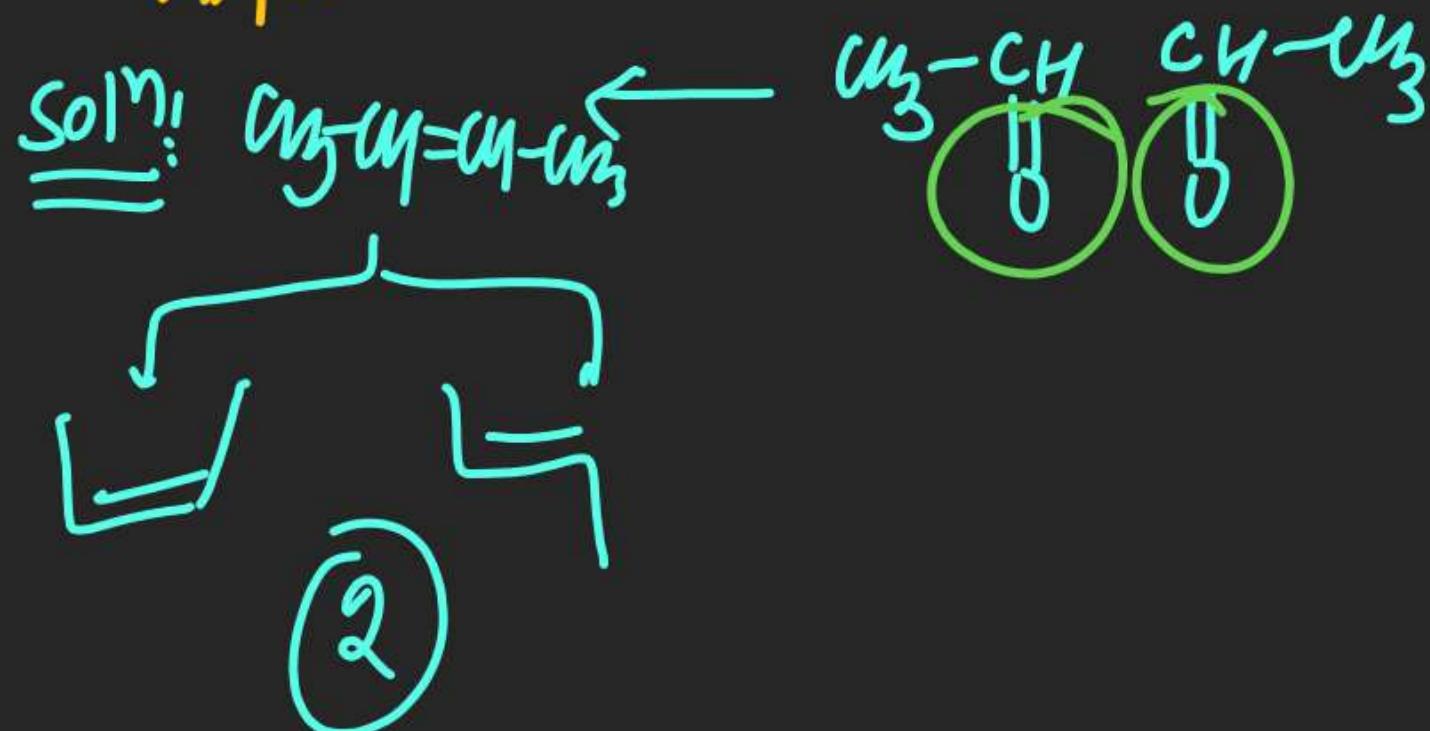
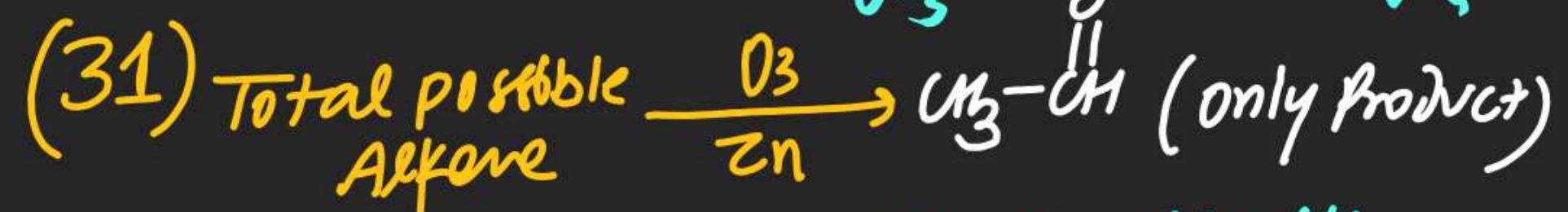
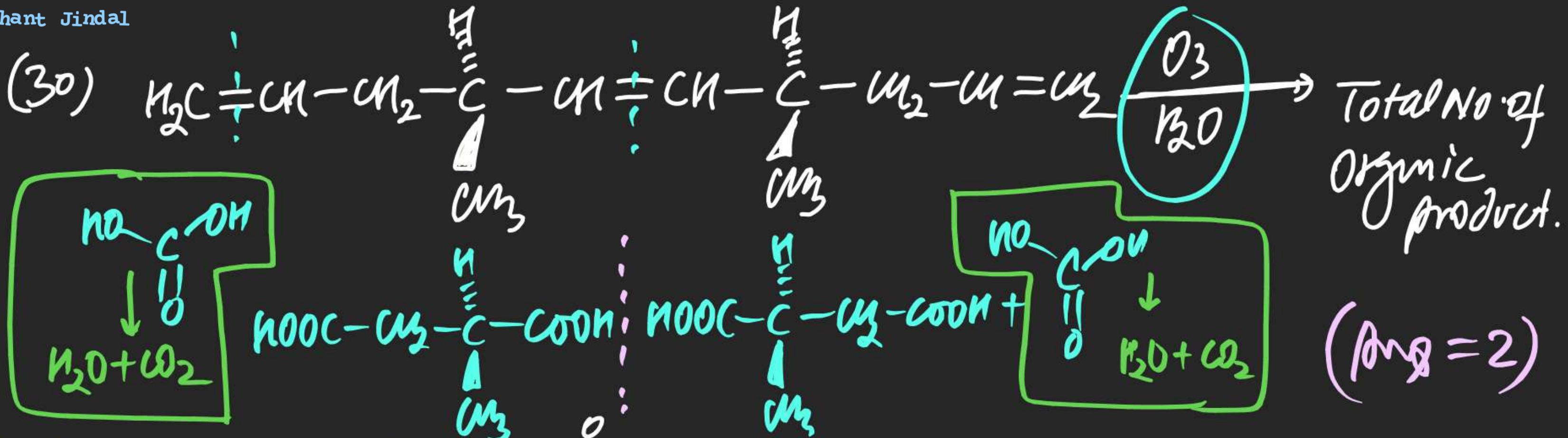


Ozonolysis

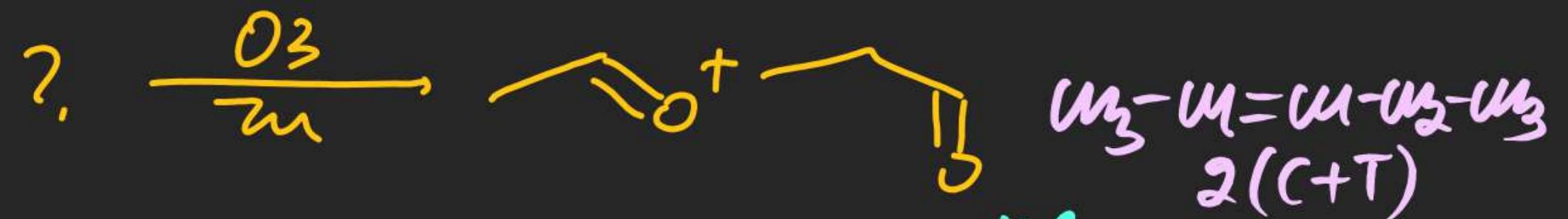
Total no. of optically Active  
product.

Ans "O":

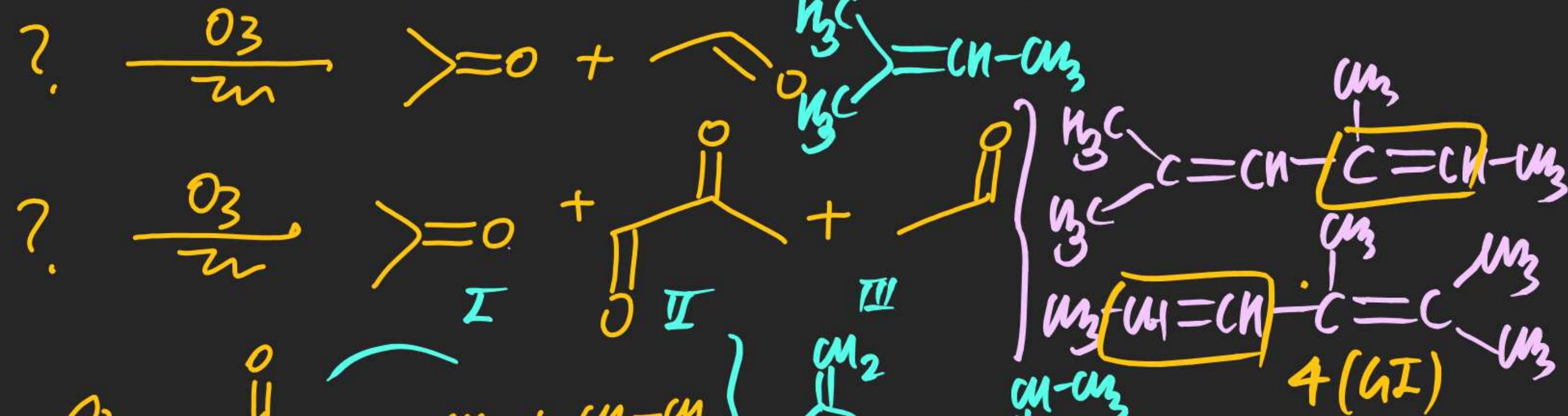
Optically Active = 2  
Total product = 3



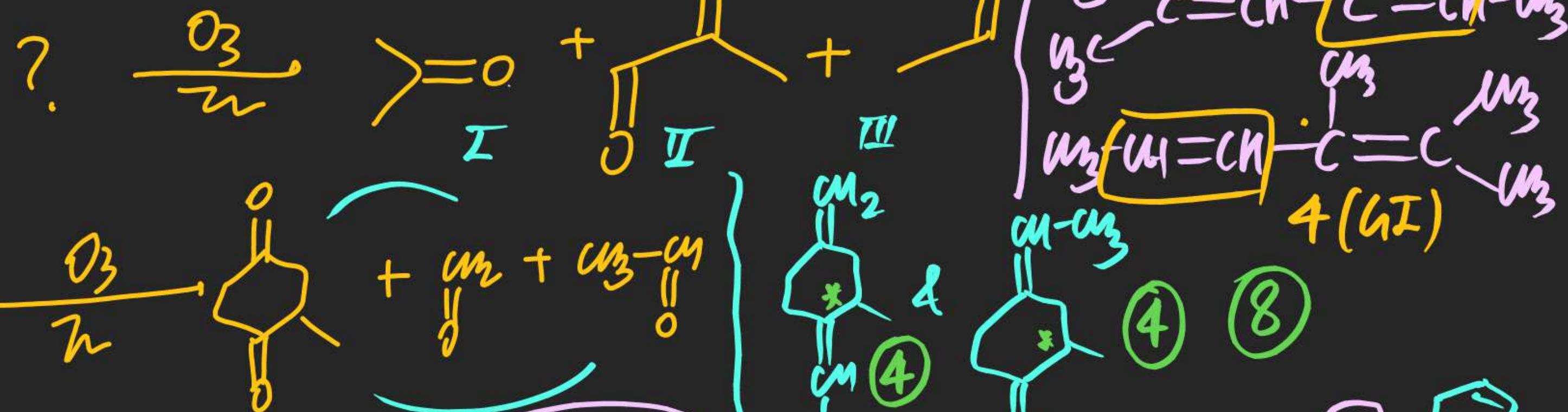
(32)



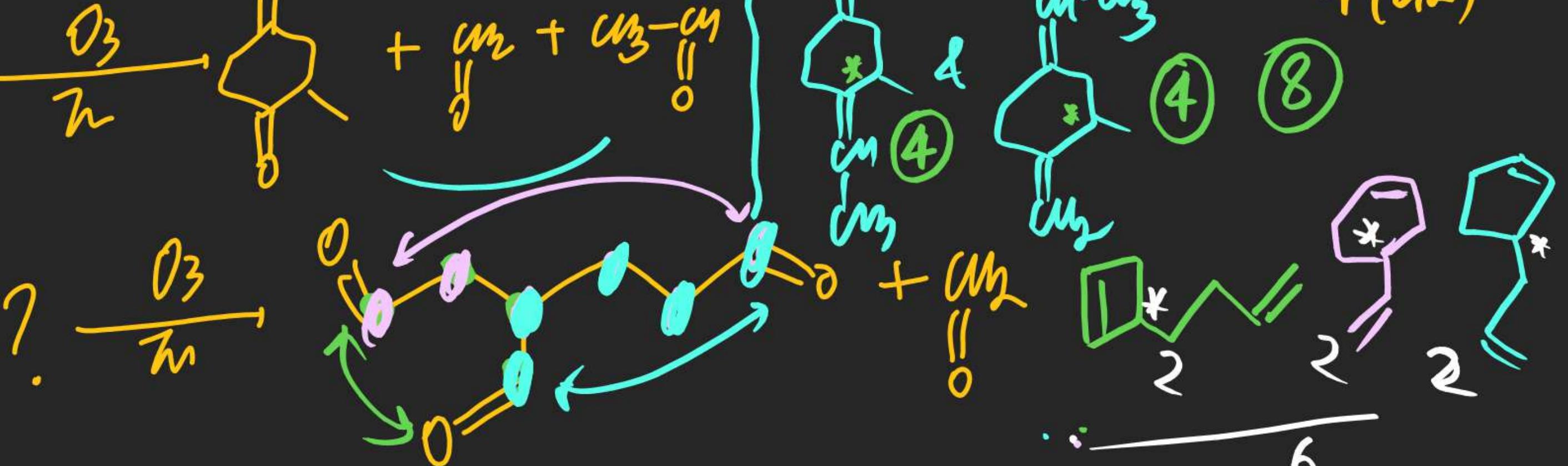
(33)

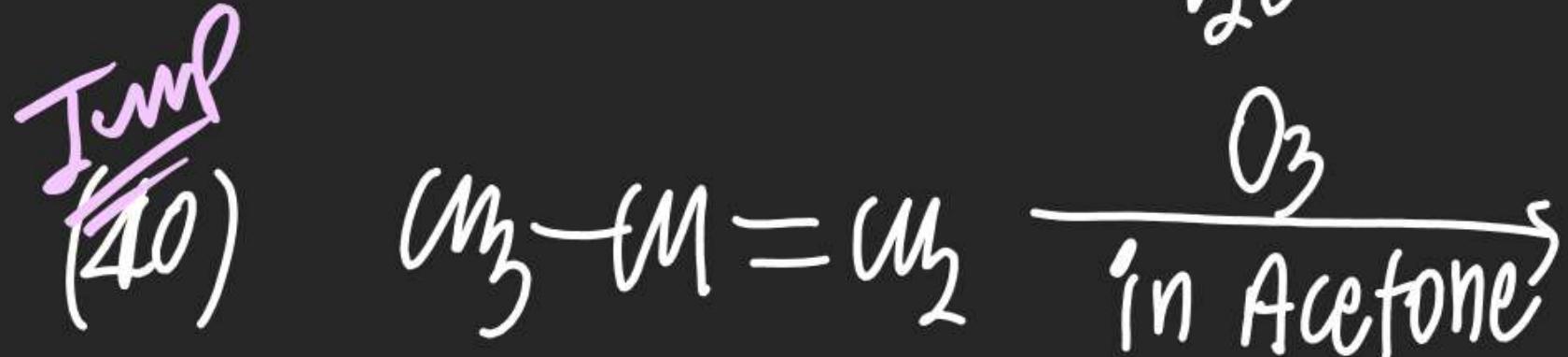
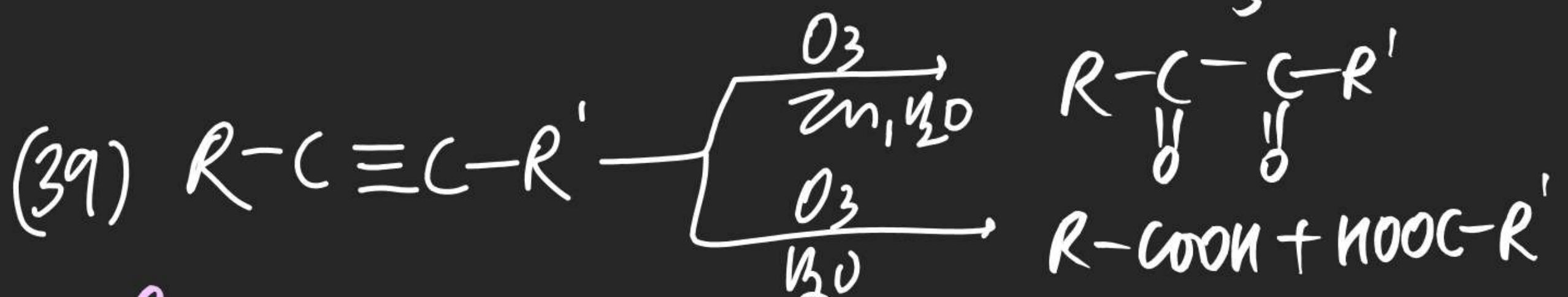
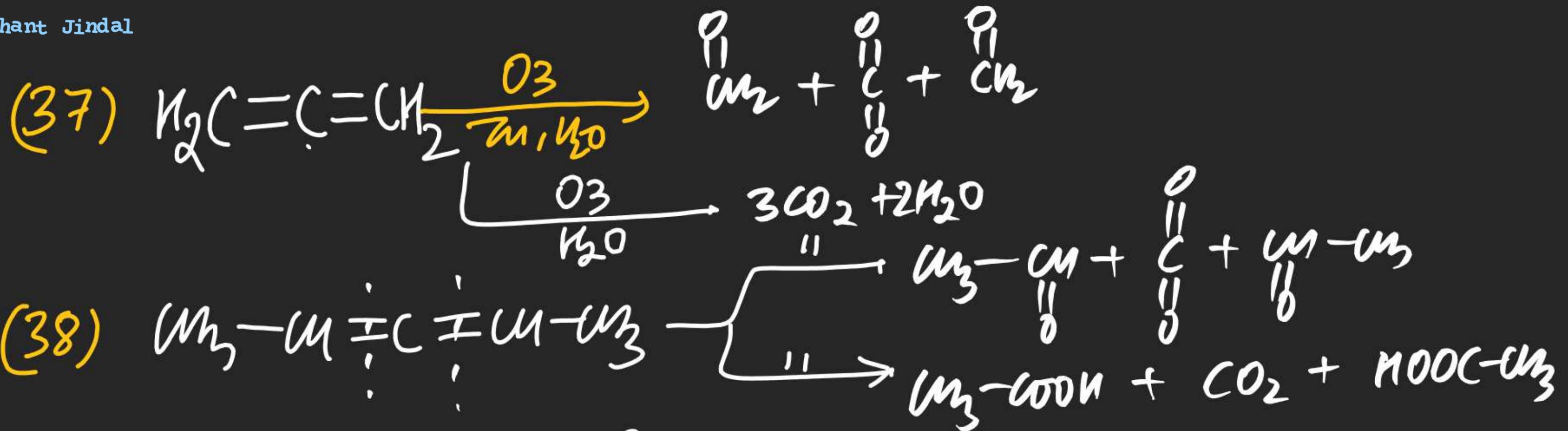


(34)

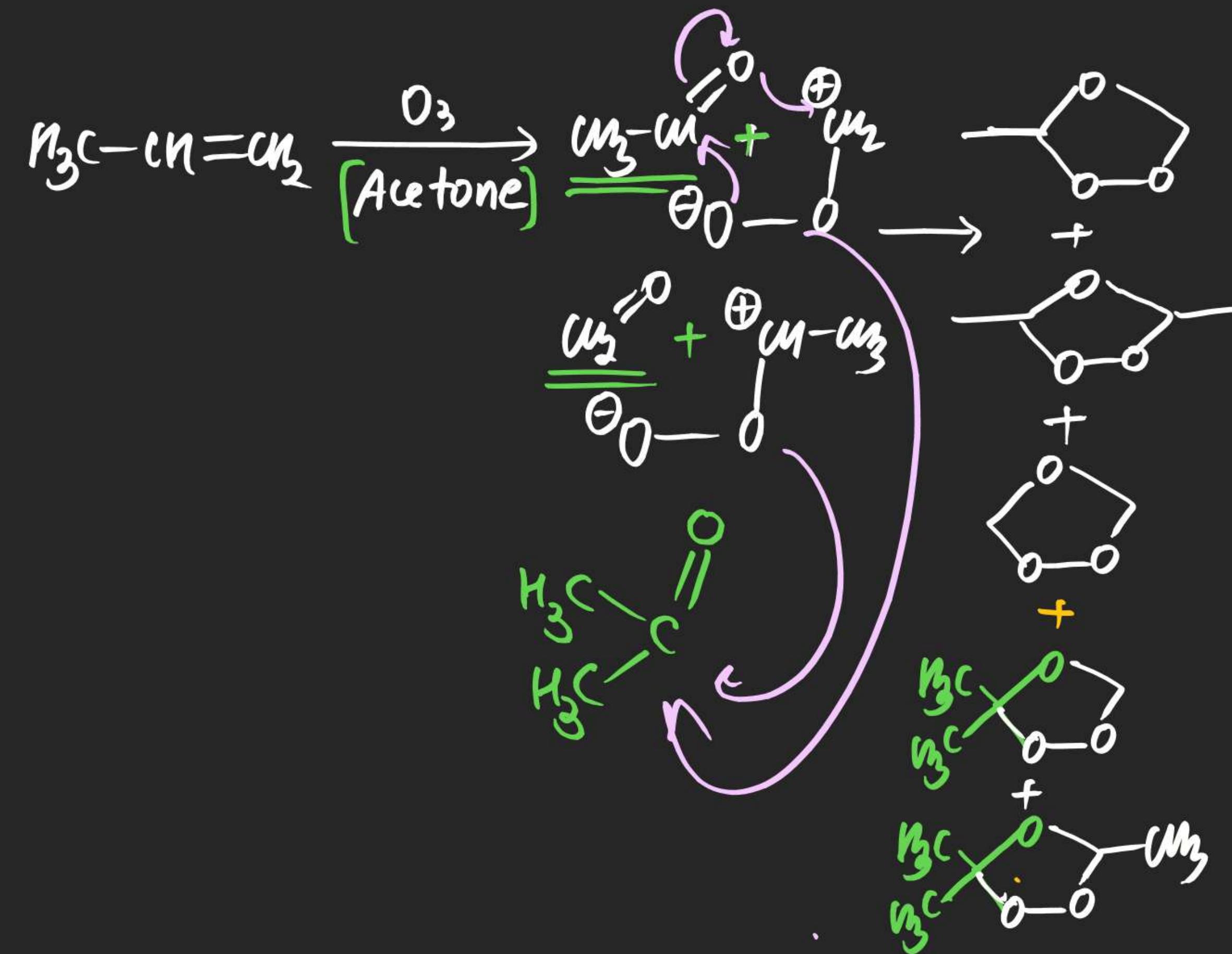


(35)



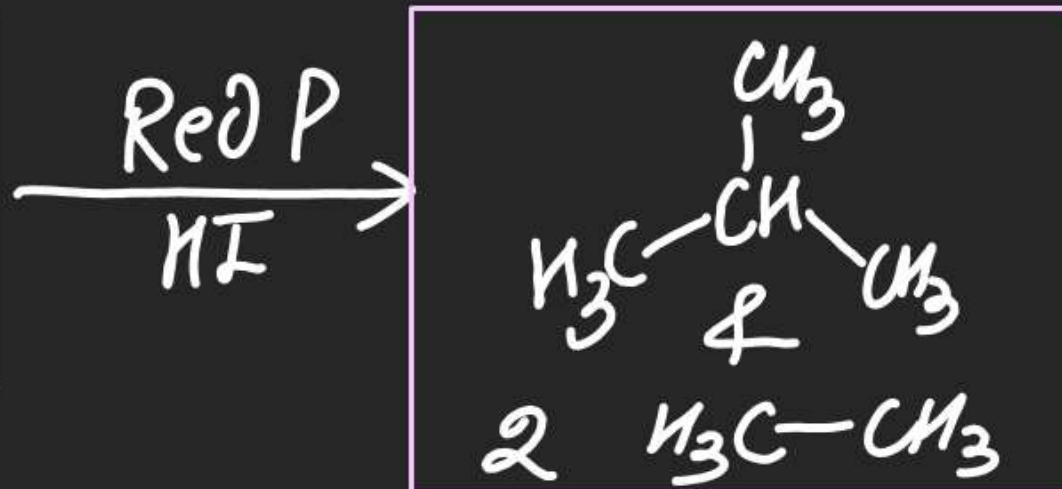
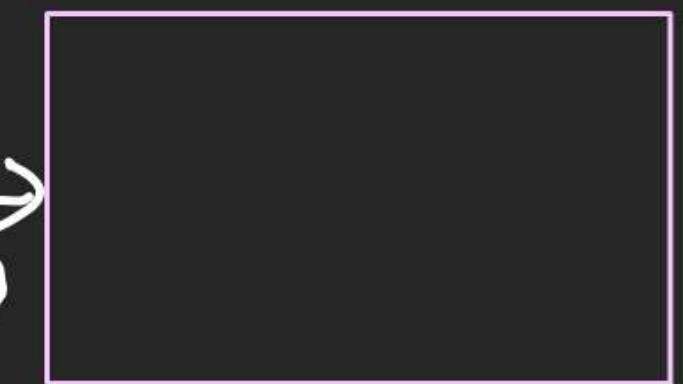


## Sol'n (40)



(41) Total possible "x"  $\xrightarrow[\text{Zn, H}_2\text{O}]{\text{O}_3}$

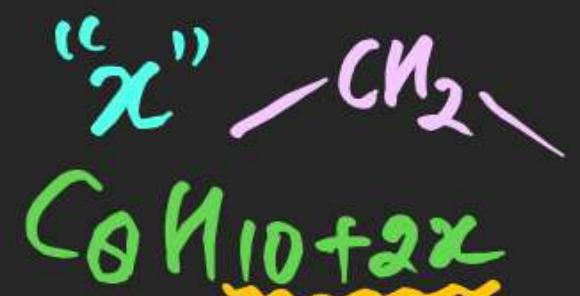
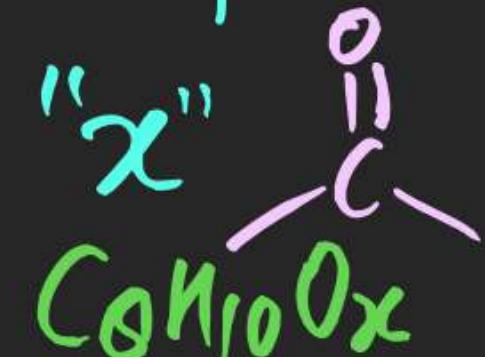
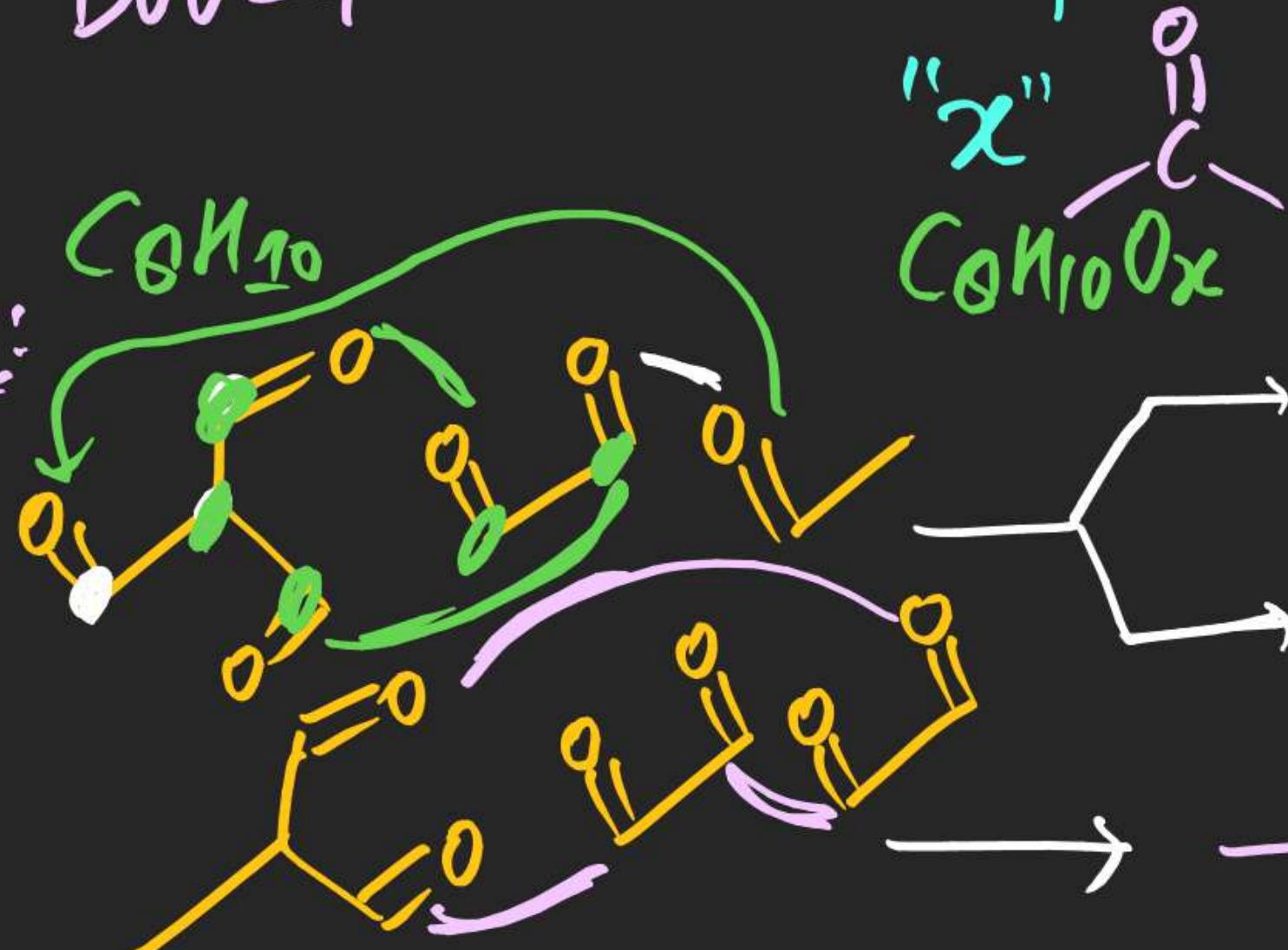
$(M_F = C_8H_{10})$   
 $DOF = 4$



Product

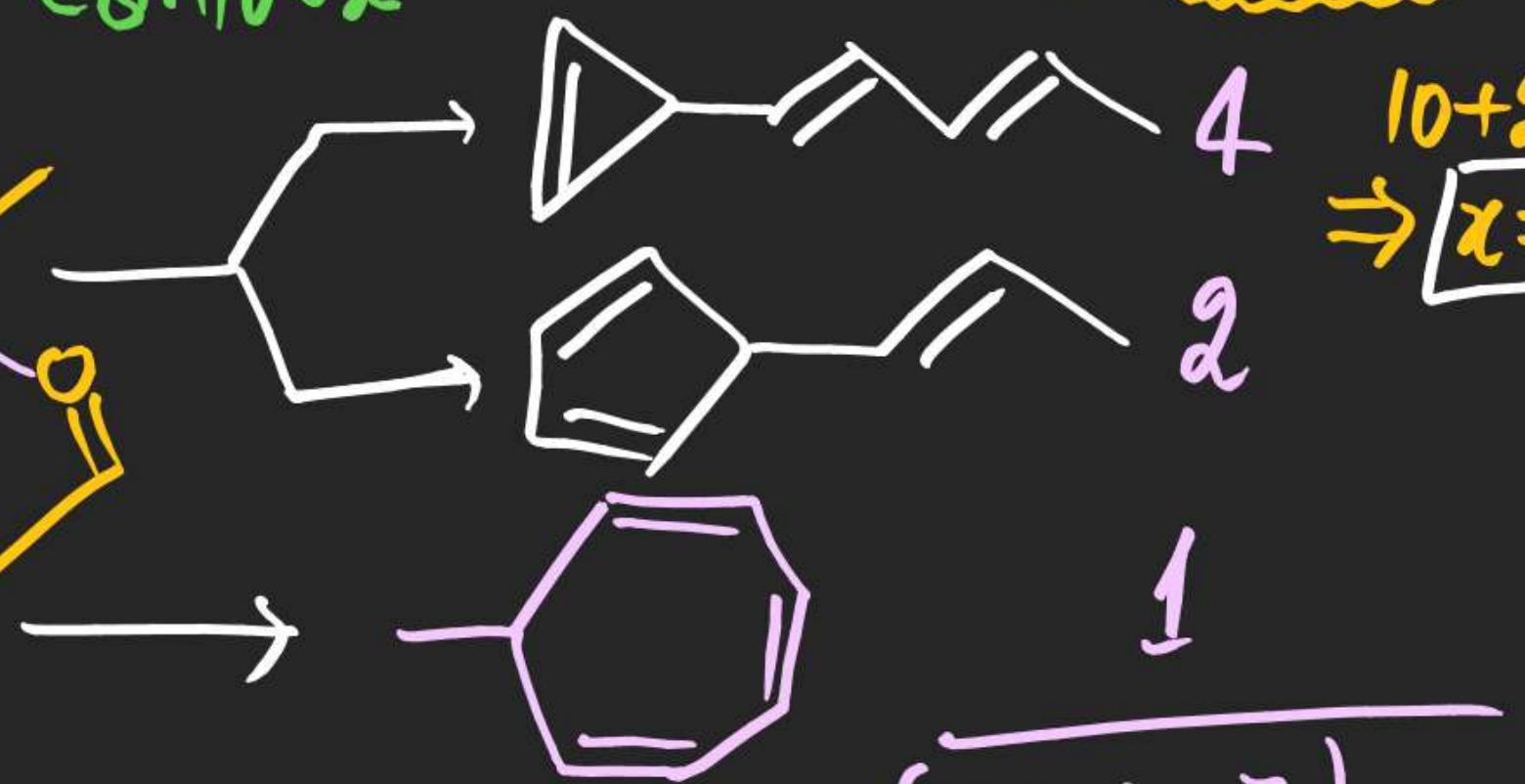
Solution:

Case (i)



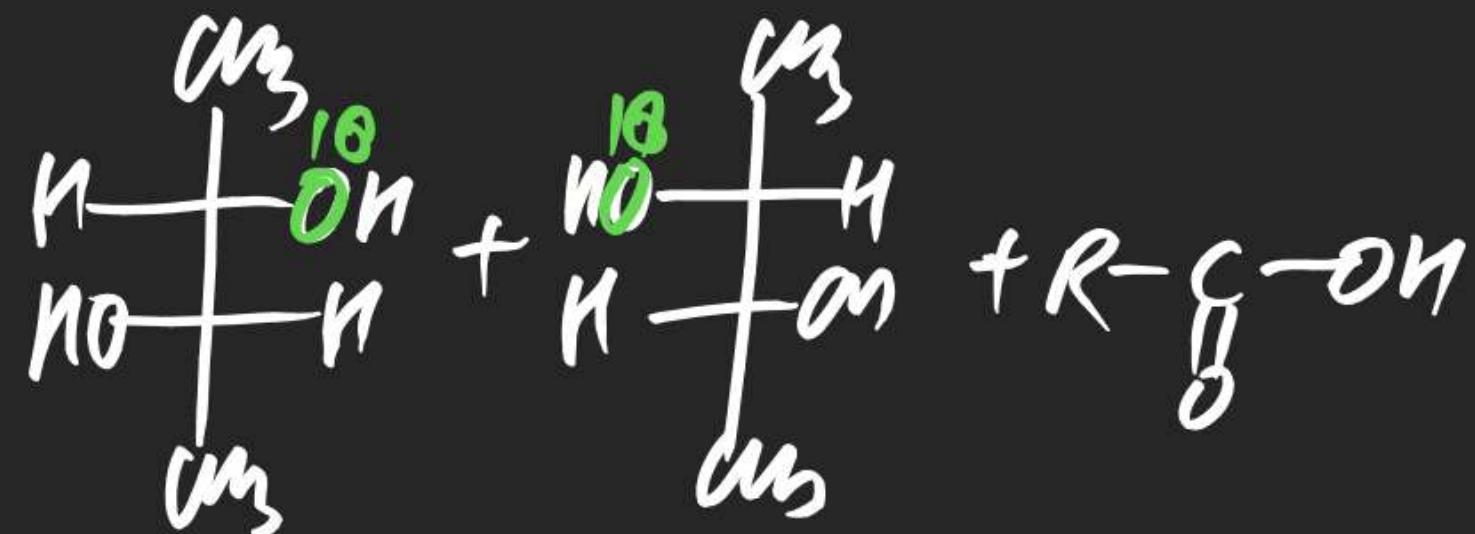
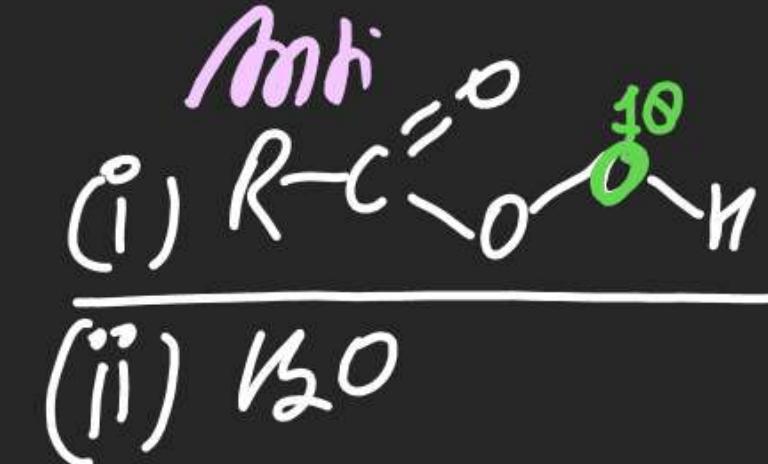
$$10 + 2x = 22 \\ \Rightarrow x = 6$$

Case (ii)

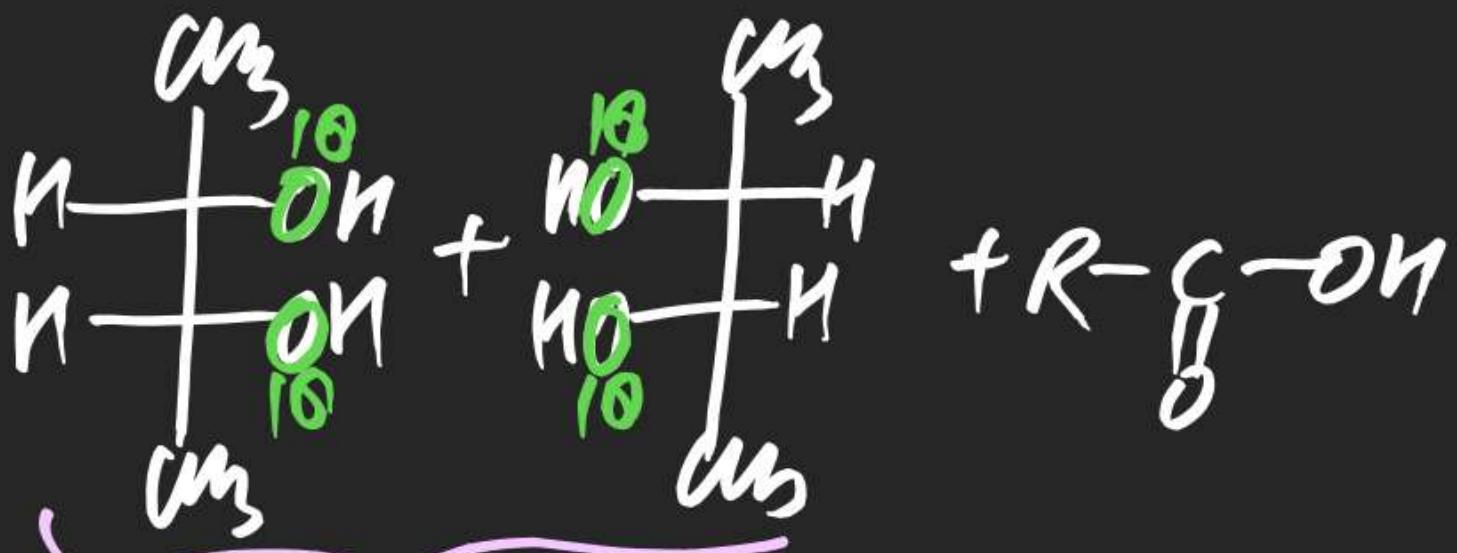
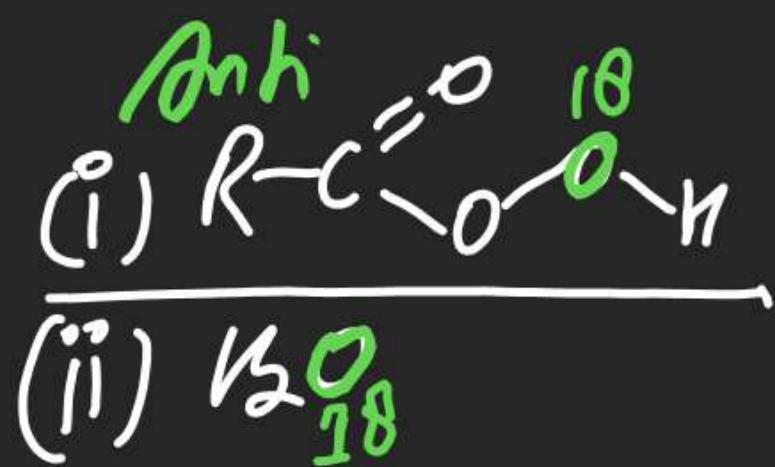


$$\begin{array}{r} 4 \\ 2 \\ 1 \\ \hline (\text{Total} = 7) \end{array}$$

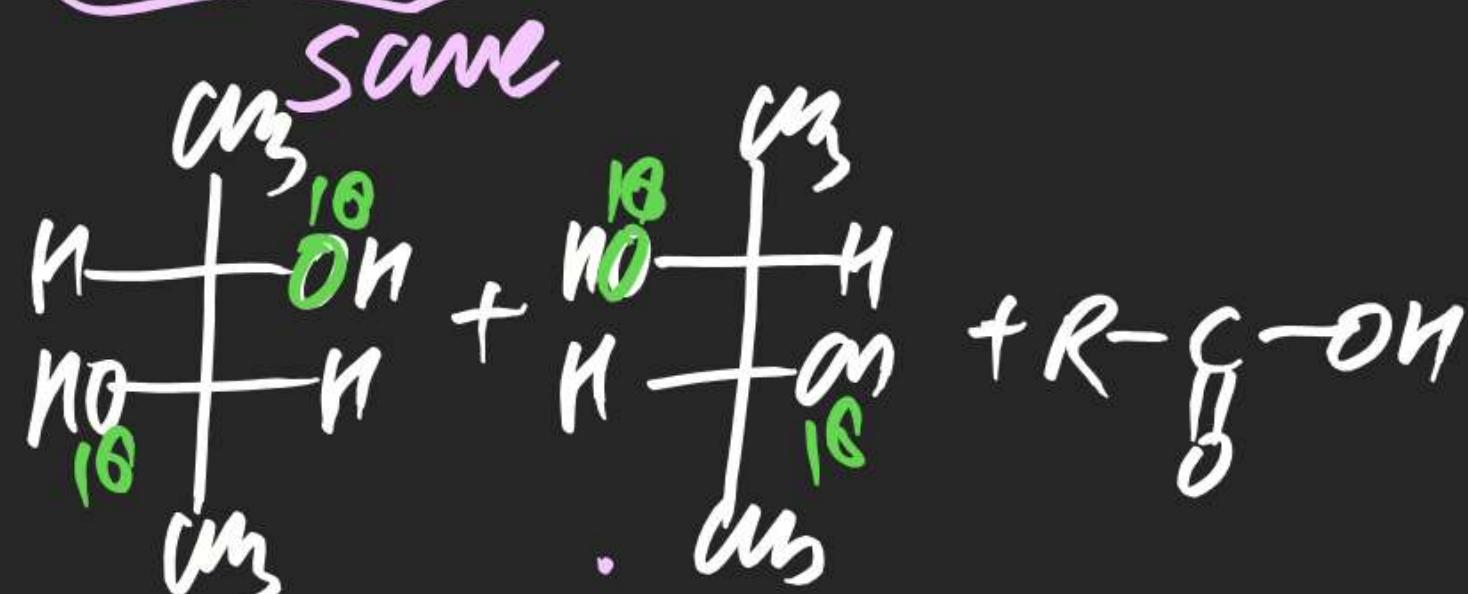
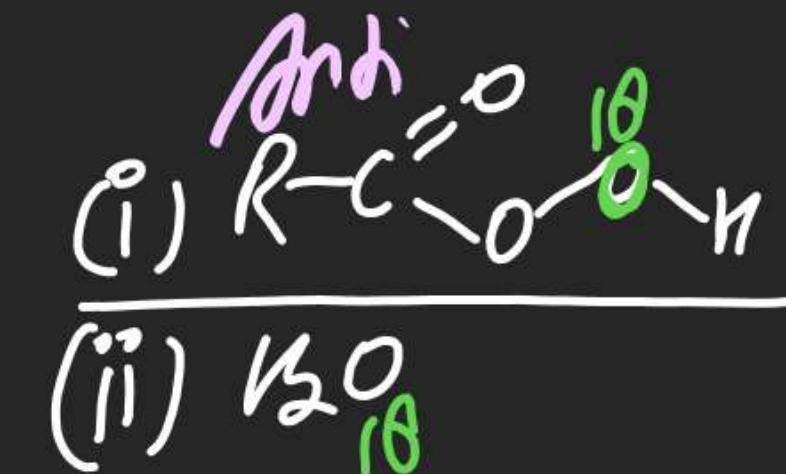
(42)



(43)

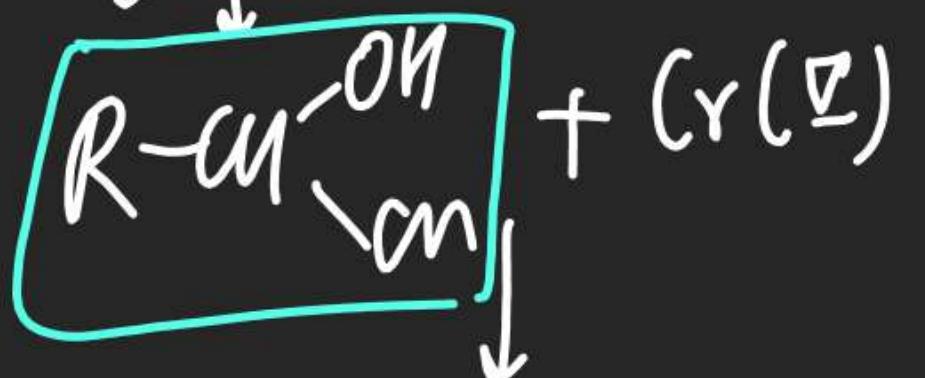
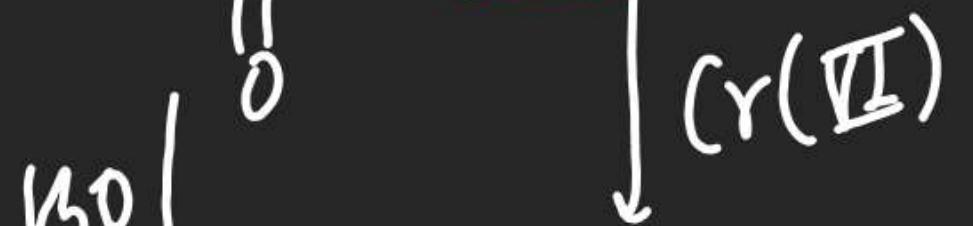
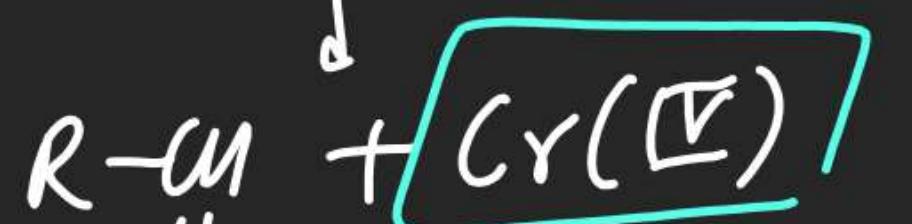


(44)



Note (i) Cr-Ester intermediate

(ii) Species oxidised during  $Rx^n$



(iii) O.S change



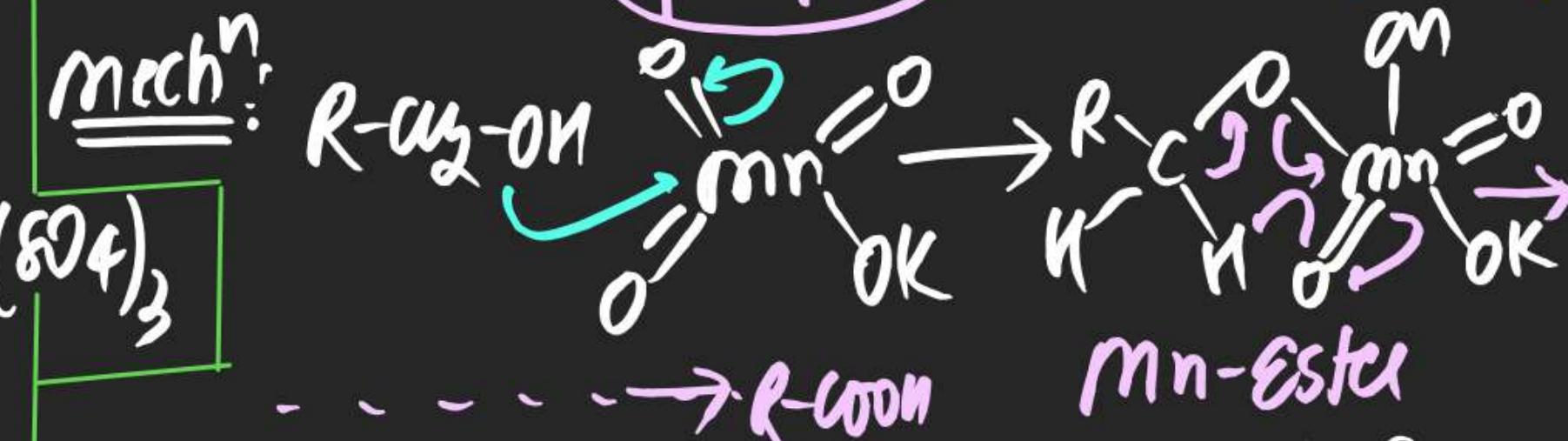
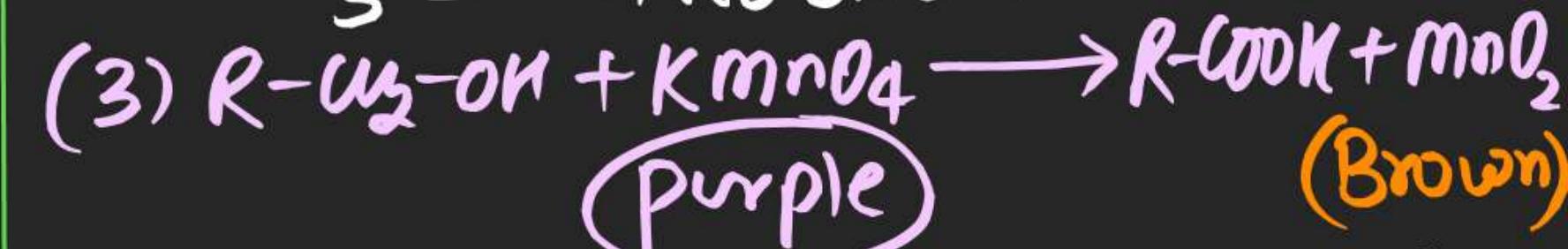
(iv) Color change

~~Cr(IV)~~ Orange  $\rightarrow$  Green

(v)  $Rx^n$  is used in POC for  
distinguishion of Alcohol.

(vi) Decomposition of Cr-Ester  
is Y.O.B

(vii) Kinetic isotopic effect  
present

(2) By Jone's Reagent: $\Rightarrow \text{CrO}_3 \text{ in H}_2\text{SO}_4$  $\Rightarrow$  Strong Oxidising Agent $1^\circ \rightarrow \text{Acid}$  $2^\circ \rightarrow \text{Ketone}$  $3^\circ \rightarrow \text{NO OXID}^{\prime\prime}$ mech<sup>n</sup>:Note: (i)  $\text{Cr(IV)} \rightarrow \text{Cr(III)}$ (ii) Orange  $\rightarrow$  Green(iii)  $3^\circ \text{R-OH}$  doesn't show this Test.(3) By  $\text{KMnO}_4$  $\Rightarrow$  Strong O. Agent $1^\circ \xrightarrow{} \text{Acid}$  $2^\circ \xrightarrow{} \text{Ketone}$  $3^\circ \xrightarrow{} \text{NO OXID}^{\prime\prime}$ 

Note (i)  $\text{KMnO}_4$  is stronger than  $\text{K}_2\text{Cr}_2\text{O}_7$

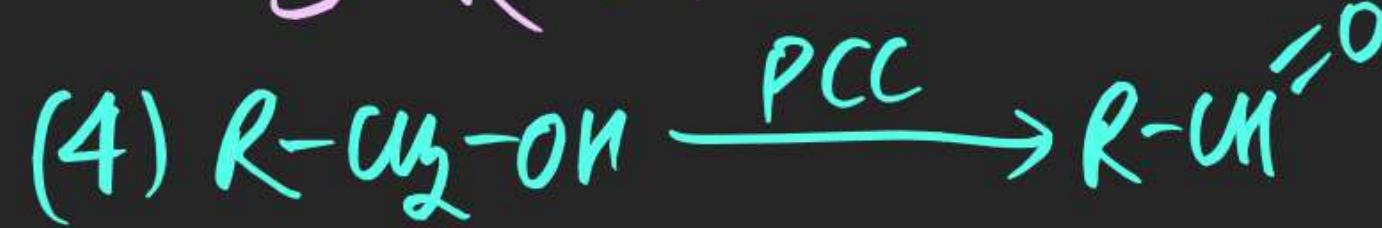
(ii) purple to Brown

(iii)  $\text{Mn}(+7) \rightarrow \text{Mn}(+4)$

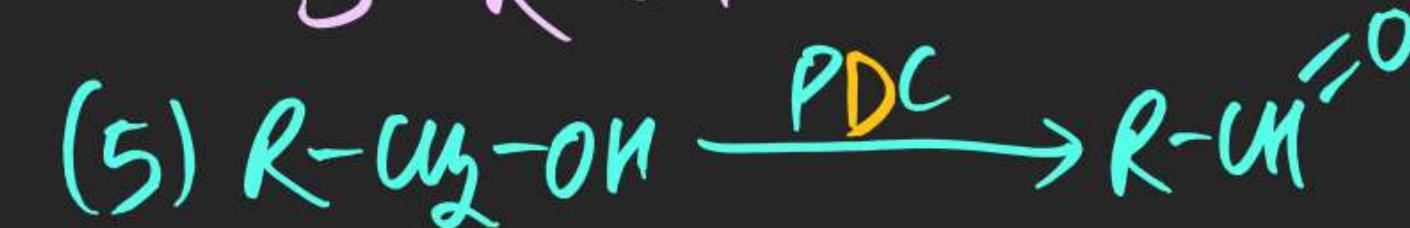
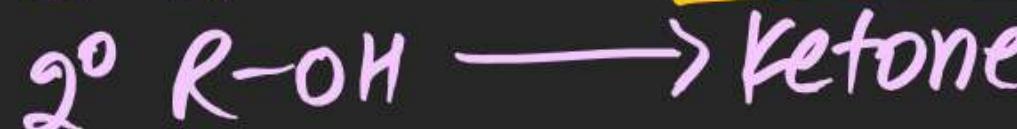
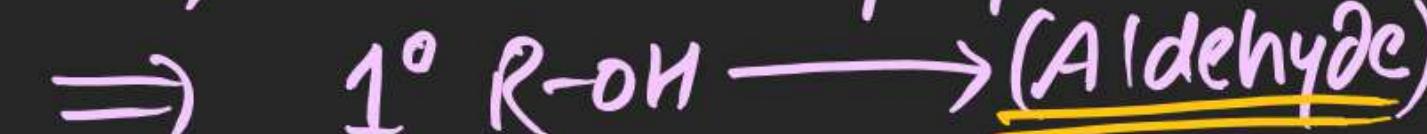
(iv)  $\text{RXn}$  is used in POC.

## (4) By Pyridinium Chlorochromate! (PCC)

M.M.F.D

 $\Rightarrow$  Mild oxidising agentNote: (i) Oxidation State Cr(IV)  $\rightarrow$  Cr(III)(ii) Orange  $\rightarrow$  Green(iii) PCC is oftenly used in  $\text{CH}_2\text{Cl}_2$ 

## (5) By Pyridinium Di Chromate! (PDC)

 $\Rightarrow$  Mild oxidising agentNote: (i) Oxidation State Cr(VI)  $\rightarrow$  Cr(III)(ii) Orange  $\rightarrow$  Green(iii) PDC is oftenly used in  $\text{CH}_2\text{Cl}_2$

(6) By Collins Reagent:

⇒ Mild oxidising agent

(6)

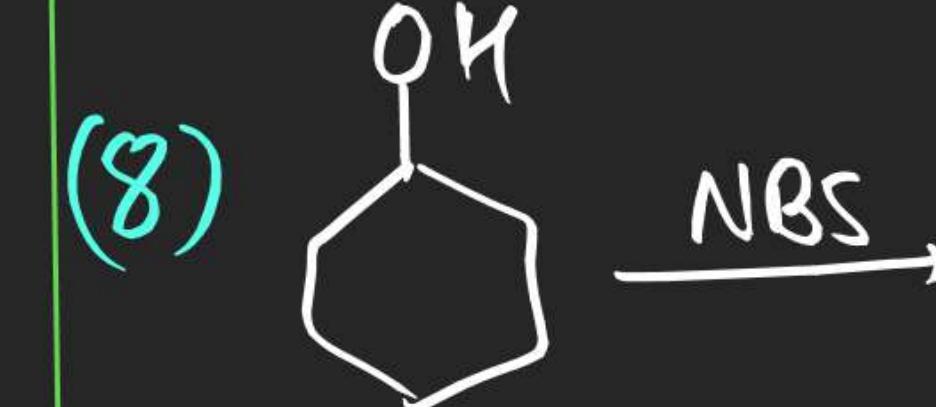
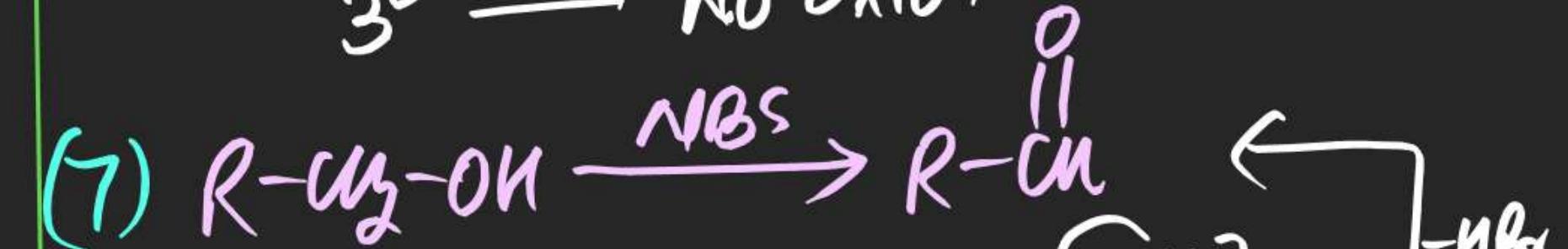
(7) By NBS:

⇒ Mild oxidising agent

$1^\circ \longrightarrow$  Aldehyde

$2^\circ \longrightarrow$  Ketone

$3^\circ \longrightarrow$  NO OXIDATION



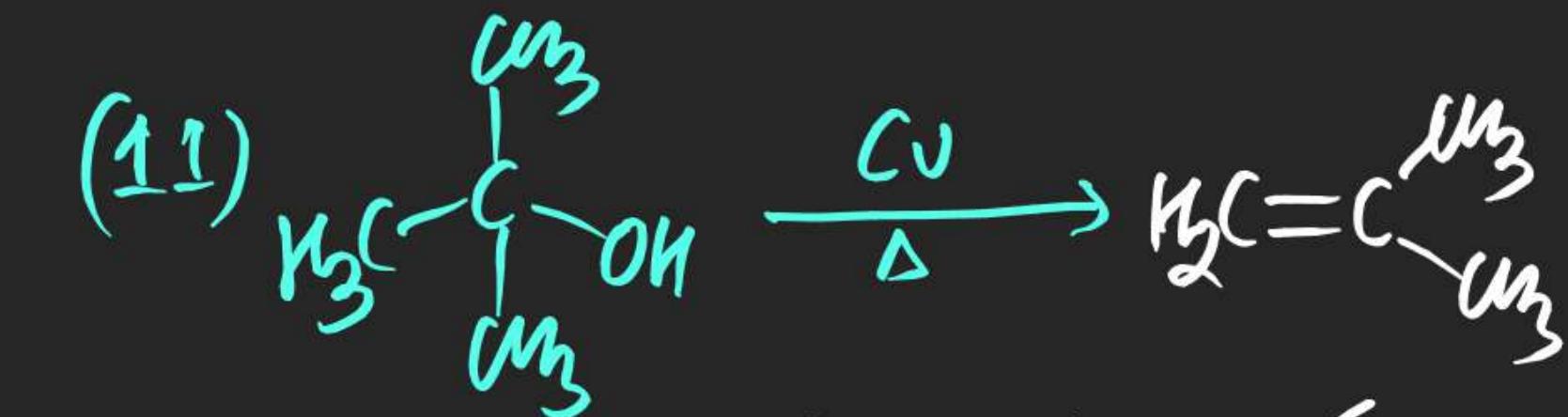
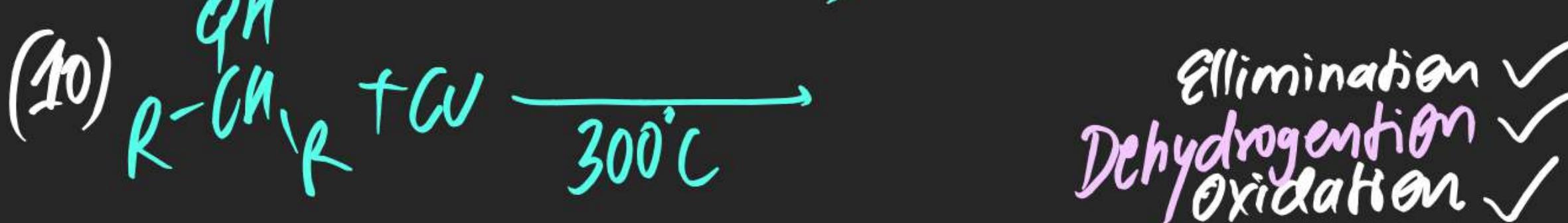
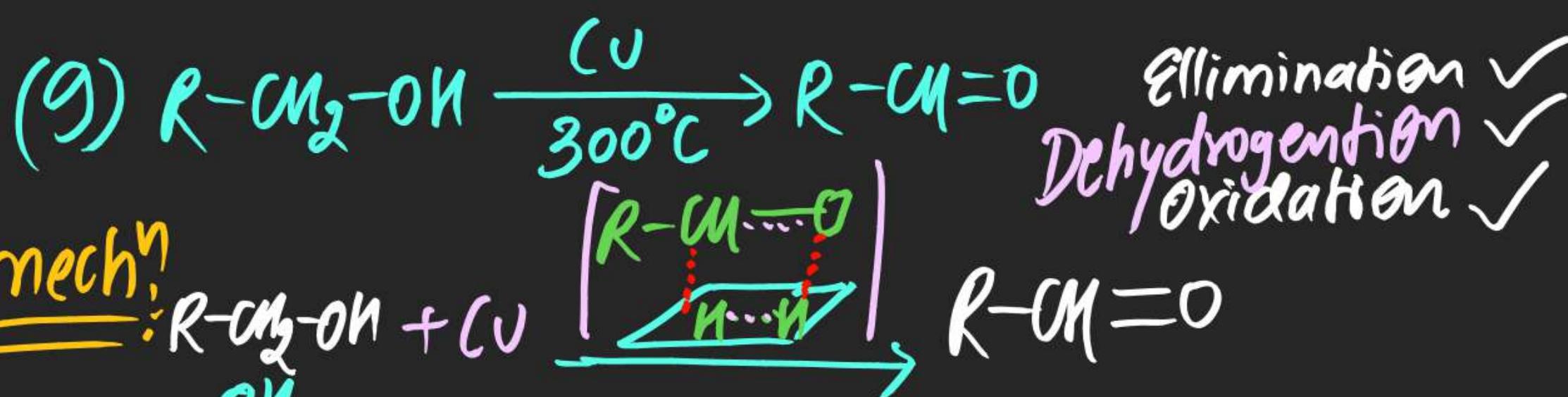
~~M.I.T.P.W~~~~(8) By Cu, Δ:-~~

⇒ mild oxidising agent

$1^\circ \rightarrow$  Aldehyde

$2^\circ \rightarrow$  Ketone

$3^\circ \rightarrow$  Alkene



Elimination ✓  
Dehydration ✓  
Oxidation ✗

(9) By TSCl, DMSO & NaHCO<sub>3</sub>:

⇒ mild oxidising agent

1° → Aldehyde

2° → Ketone

3° → No oxidation

