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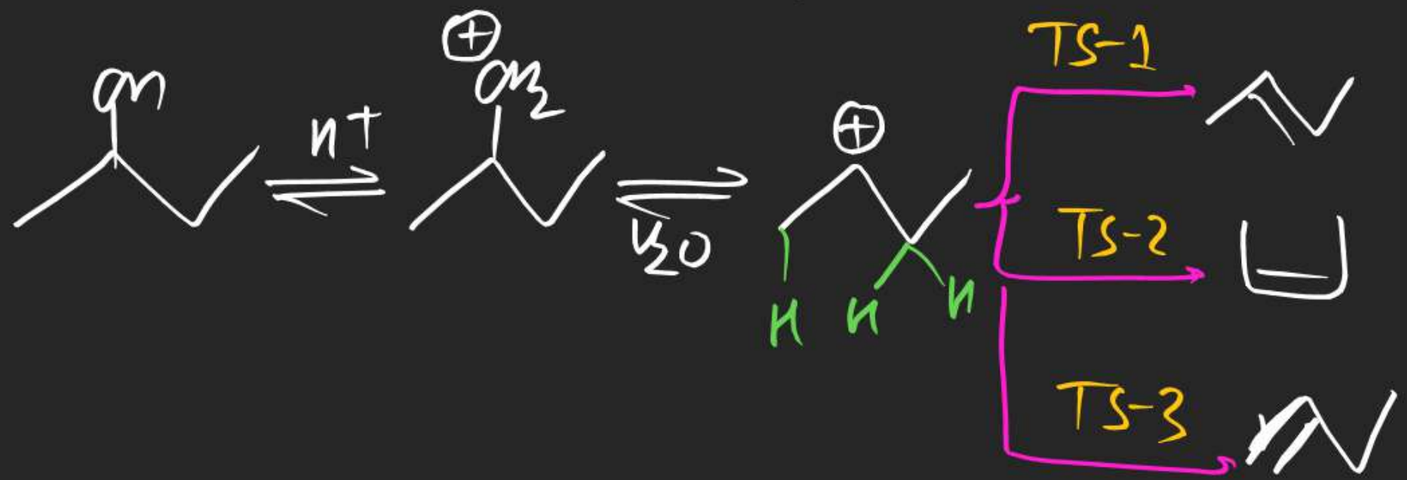
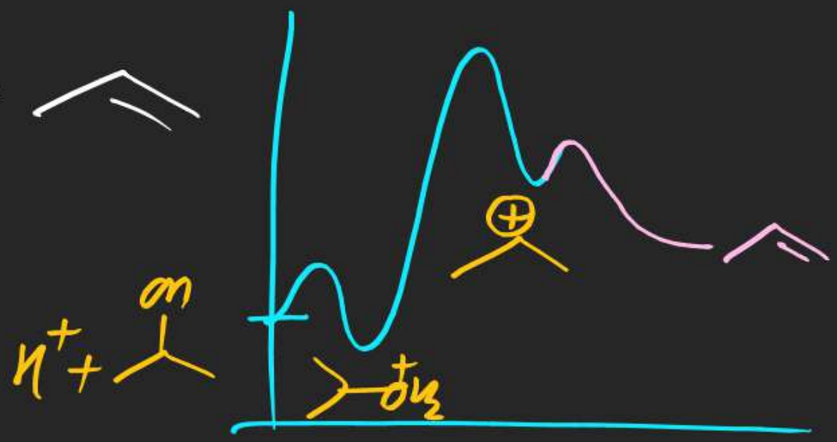
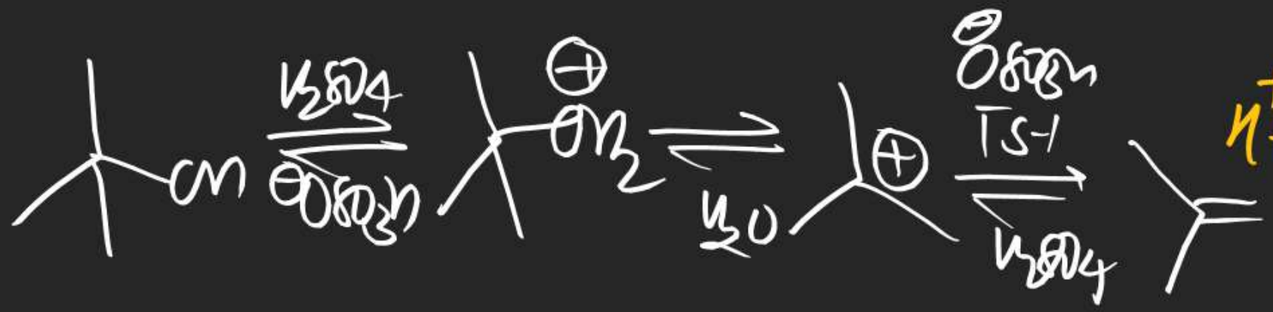
Soln (2)

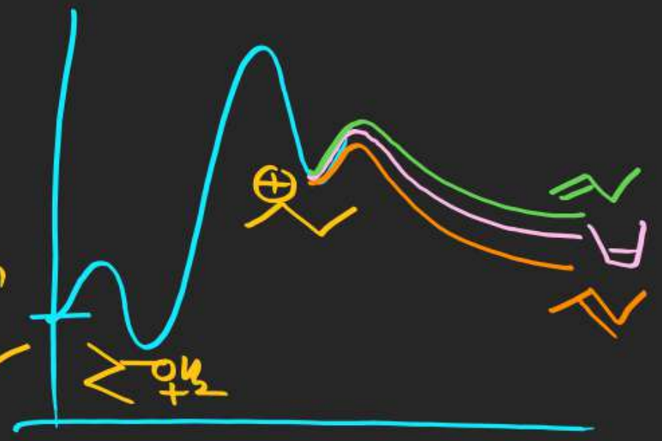
Soln (3)

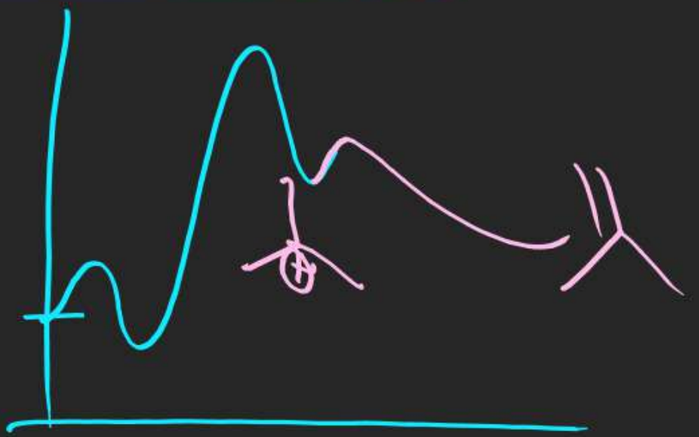




Soln (9)







(5) 

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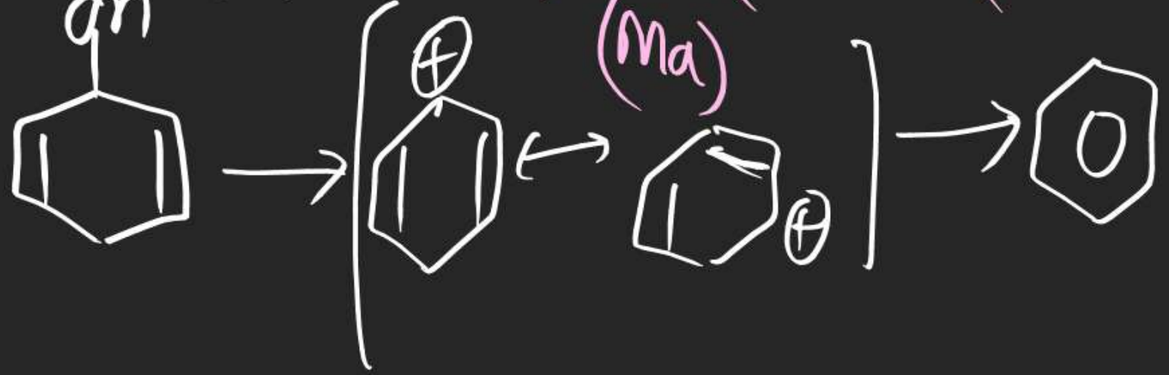
(8) 
(ma)

(9) 
(ma)

(10) 
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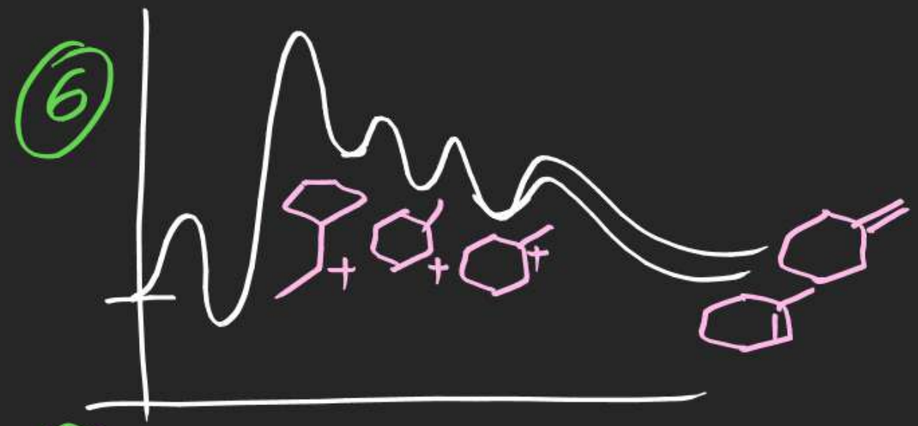
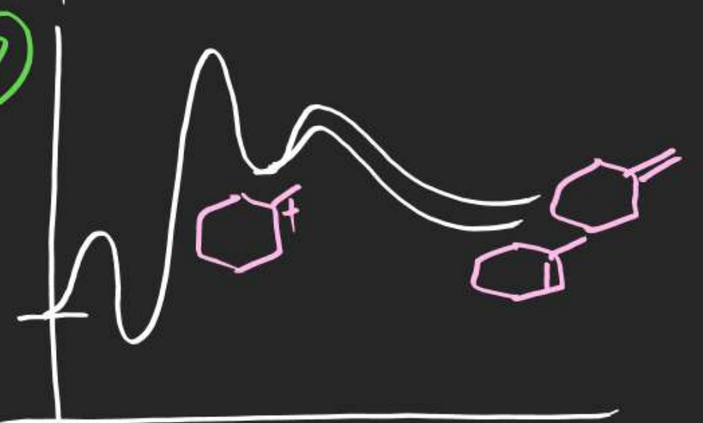
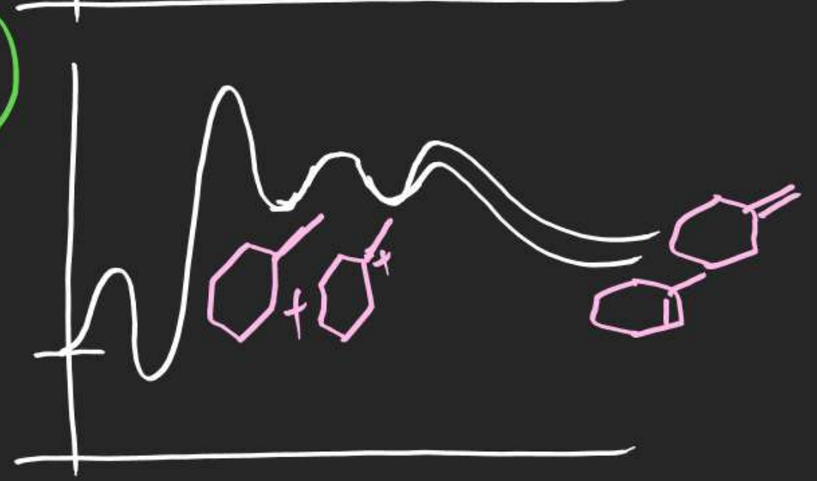




9/(8) 

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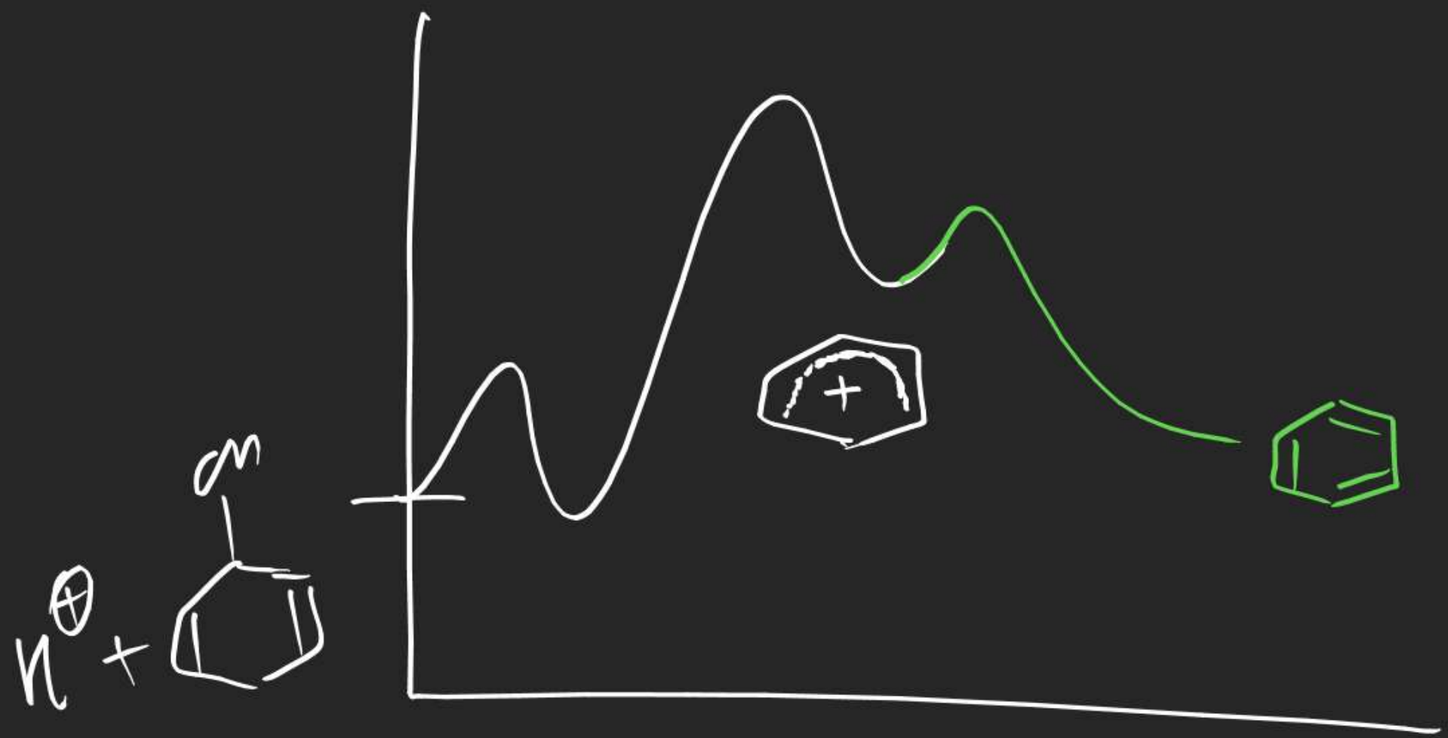
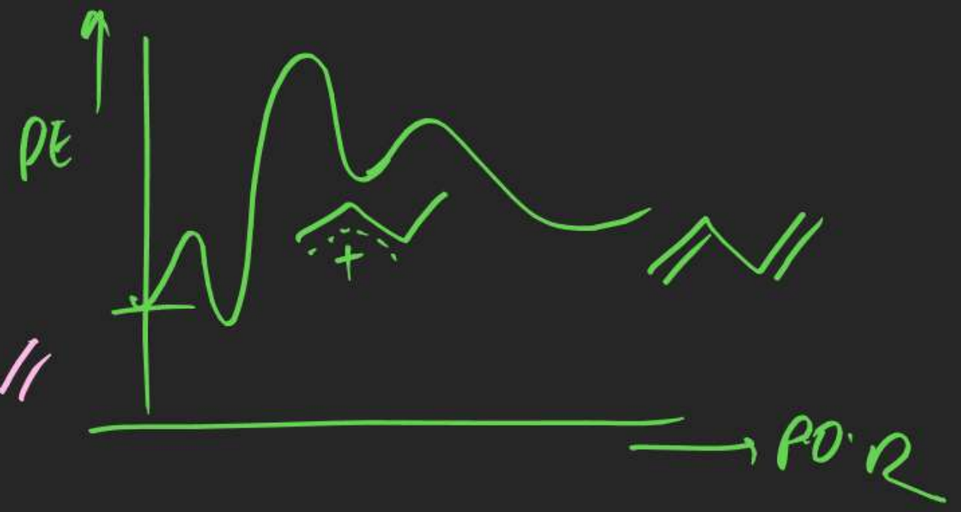
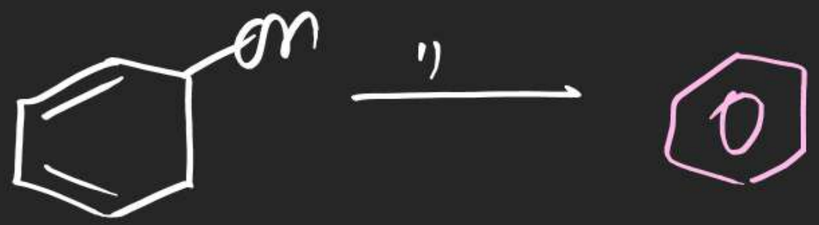
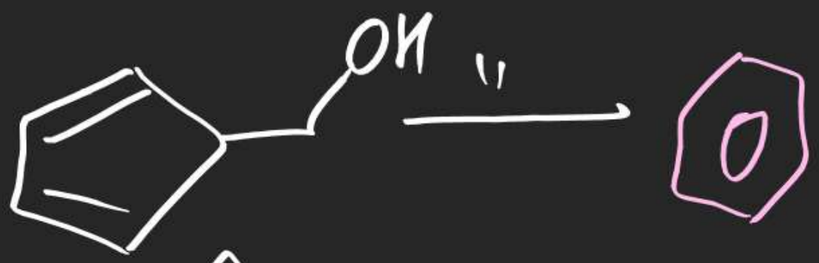


(11) 

(12) 



(13) 

(14) 

(15) 

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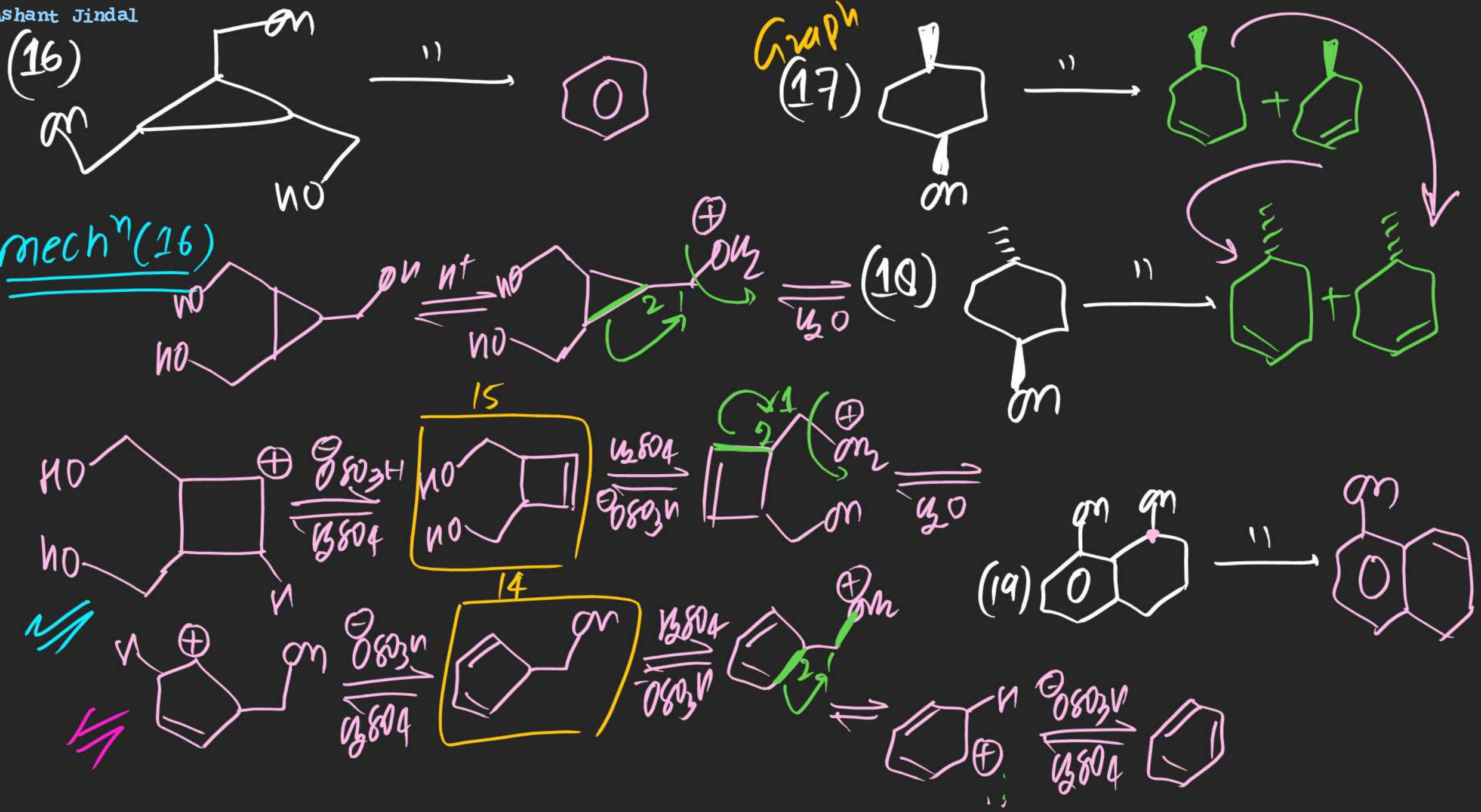

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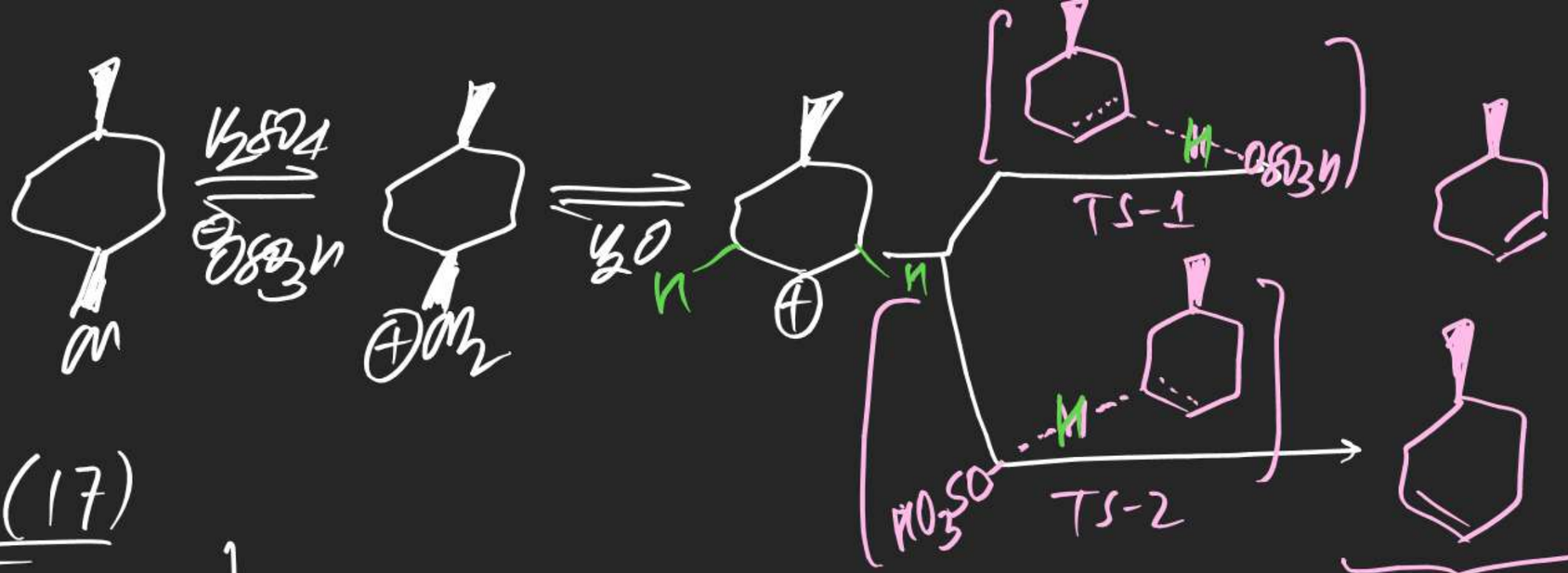
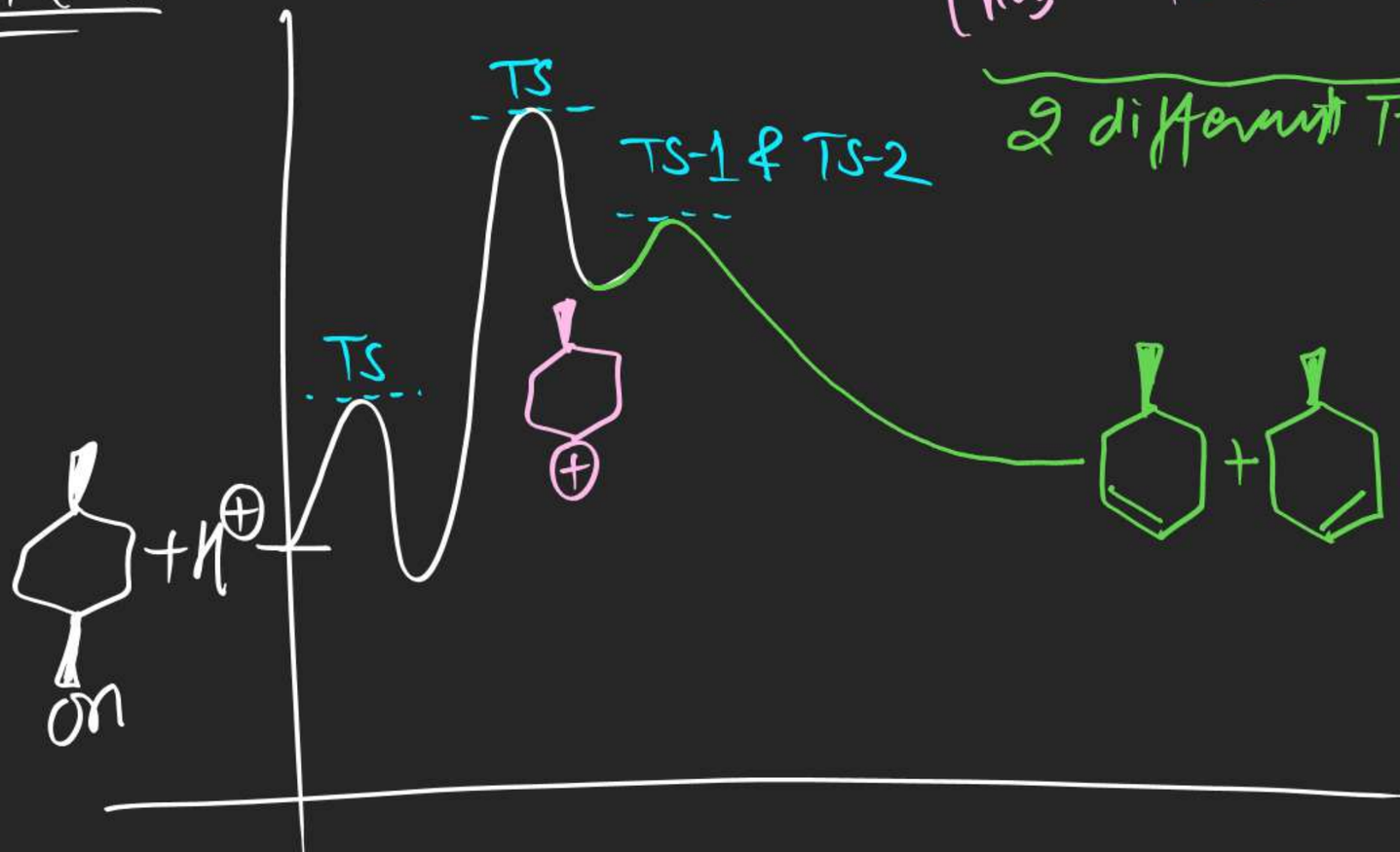
Mech^{n} (17)



2 different T.S

2 Enantiomers (diff Products)

Graph (17)



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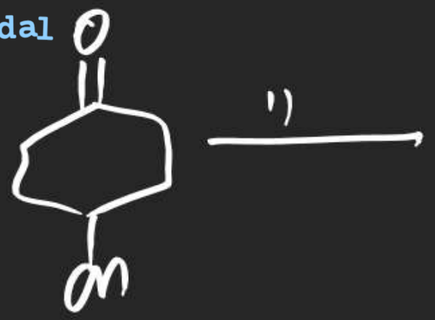
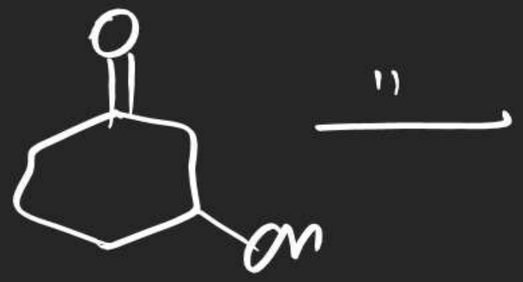
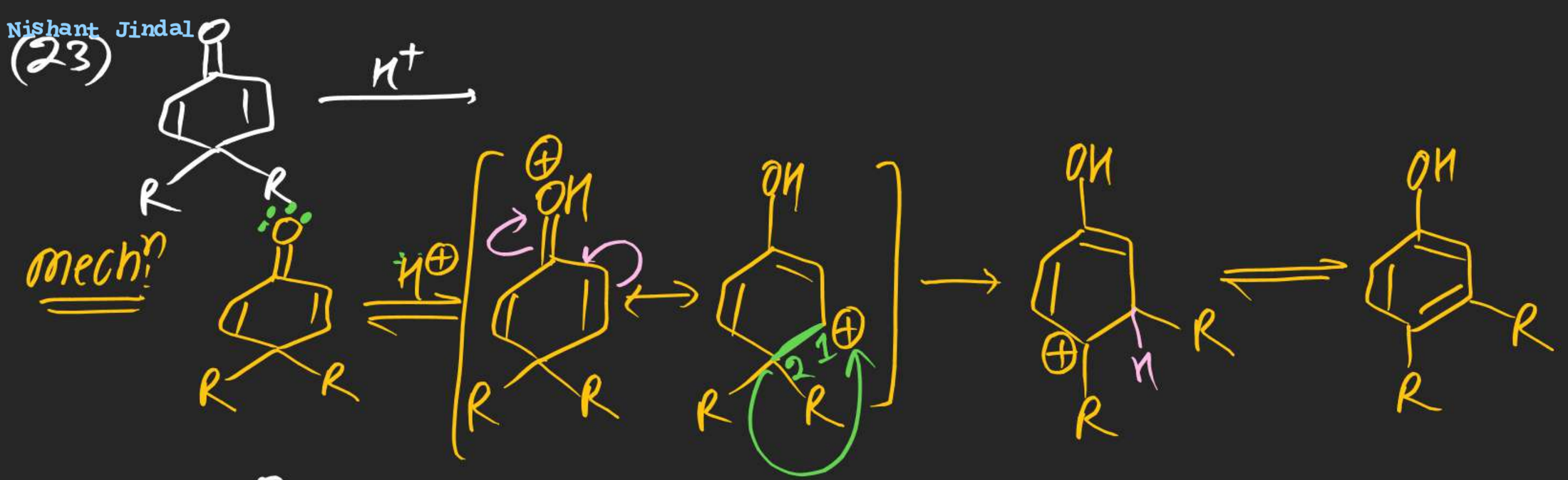
(20) 

(21) 

(22) 

(23)



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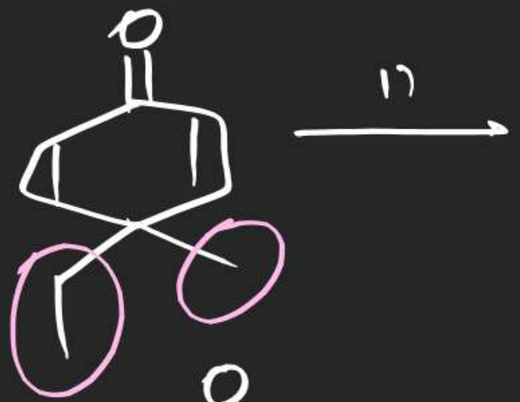

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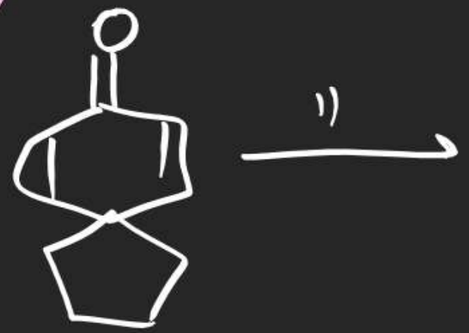
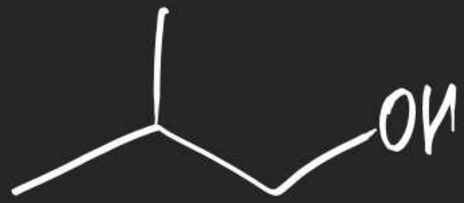


(26)  $\xrightarrow{\Delta}$

(27)  $\xrightarrow{H^+}$ "Cyclic Product"

(28)  $\xrightarrow{H^+}$ "Cyclic Product"

(29)  $\xrightarrow[(5^\circ C)]{H^+}$

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(30) 

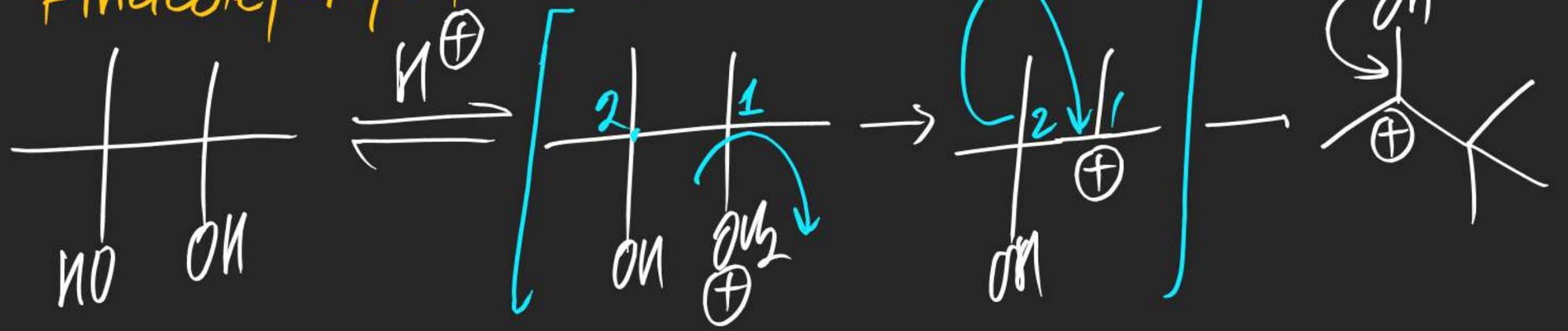
Pinacole to Pinacolone Reaction!!-

(31) 

Vic-diol / Pinacole / Glycol

Pinacolone

Mechⁿ:-



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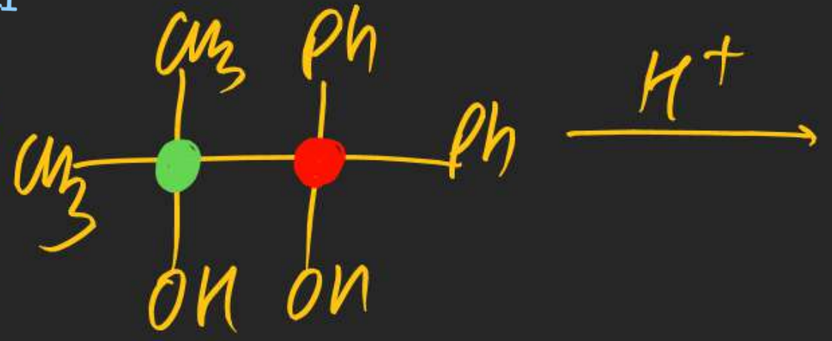
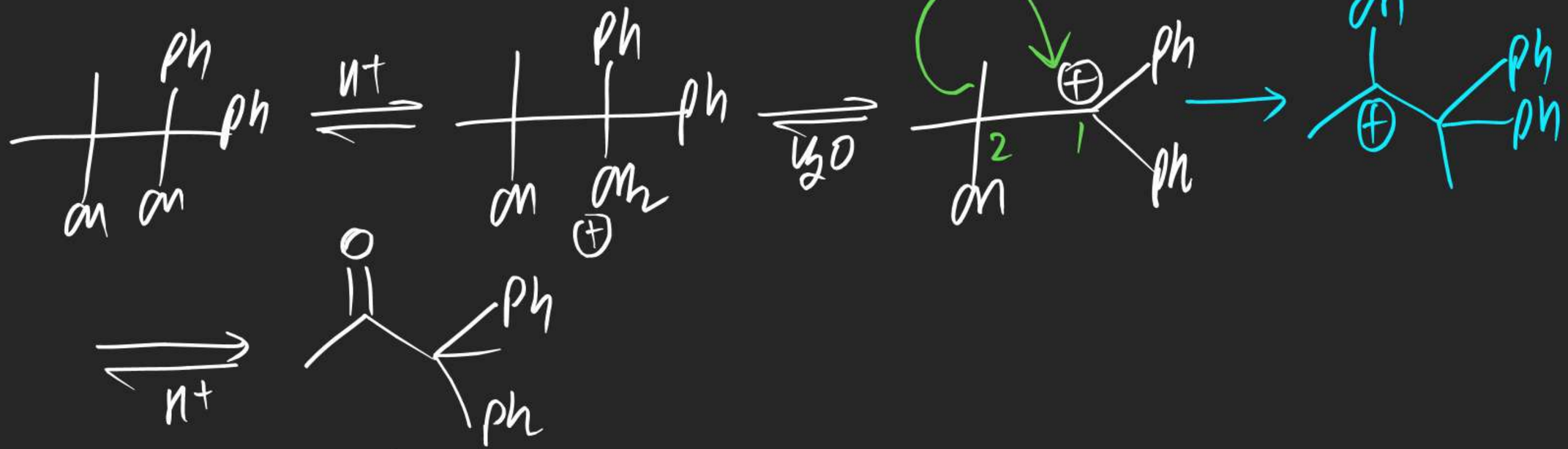
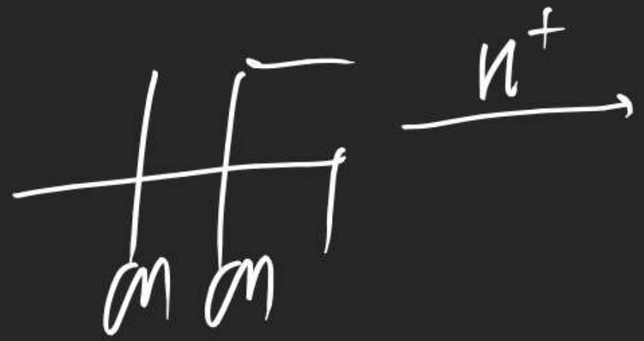
(32) 

Mechⁿ: 

(33) 

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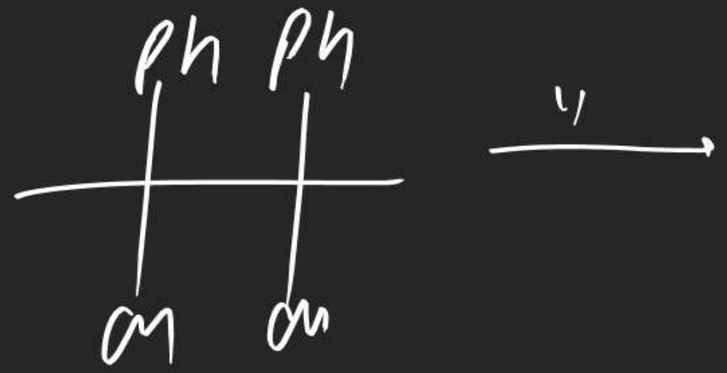
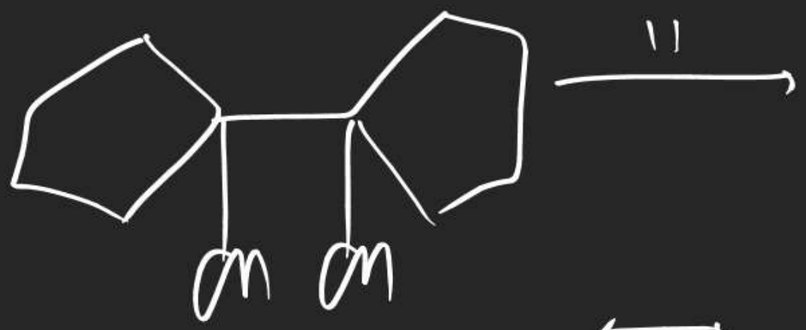
(34)

(35)



(36)



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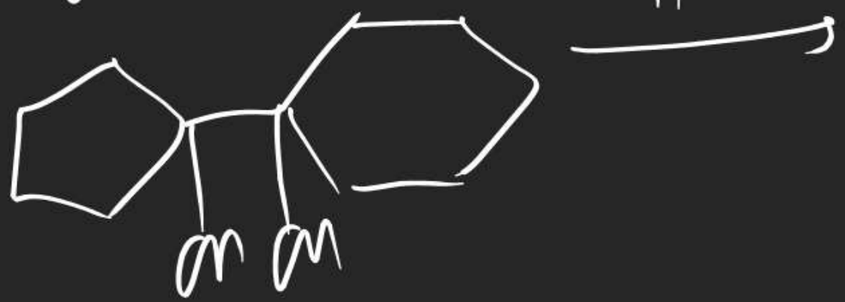

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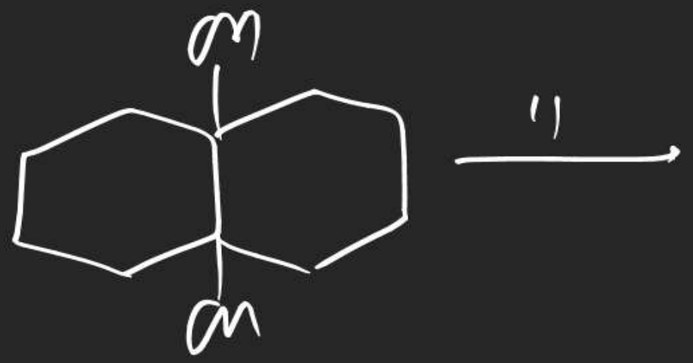
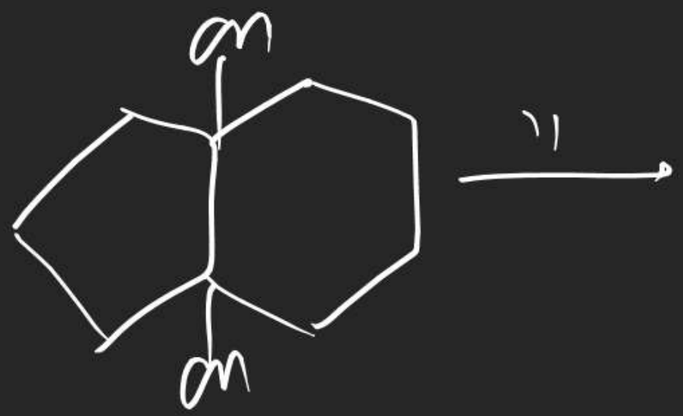
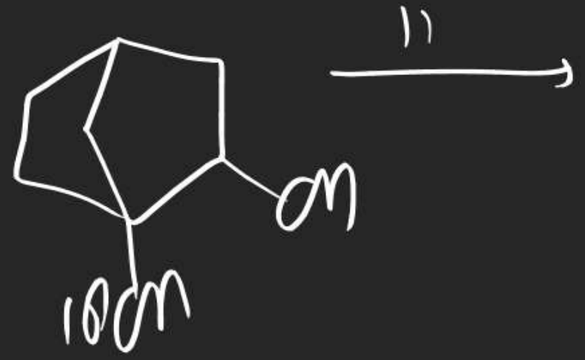
(39) 

(40) 

(41) 

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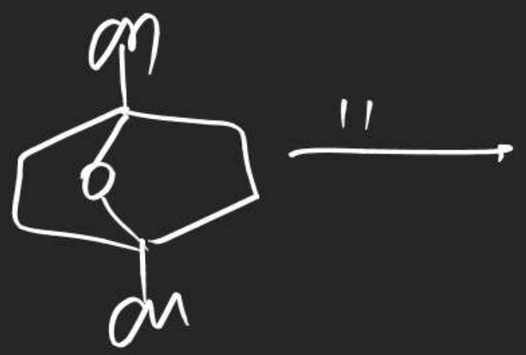
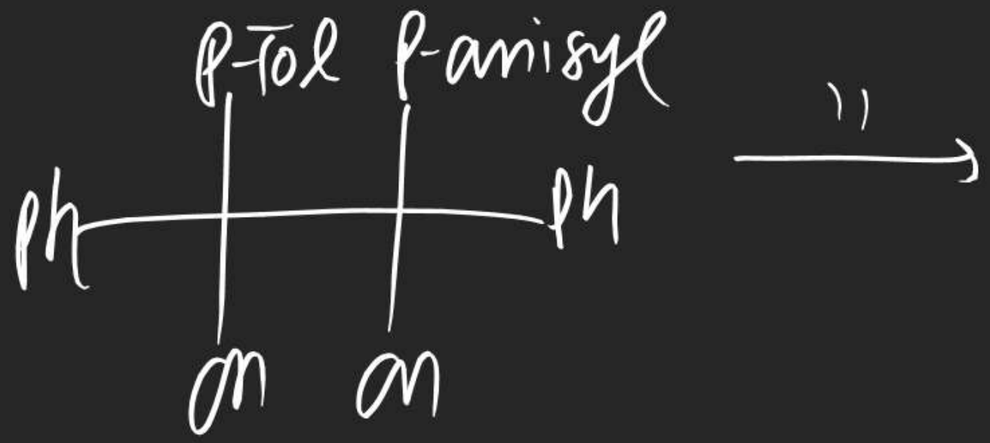
Semi Pinacolone Reaction:

(42)



(43)

(44)



(45)

(46)

(47)

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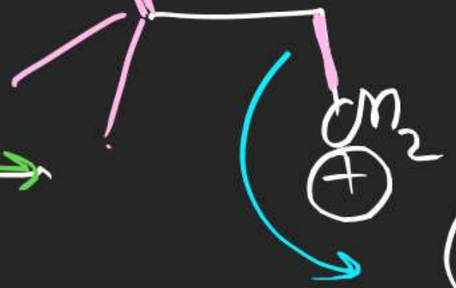
(48) 

$NaNO_2/HCl$

P



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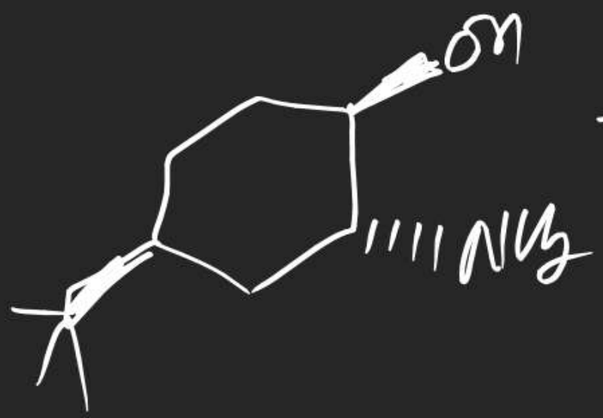
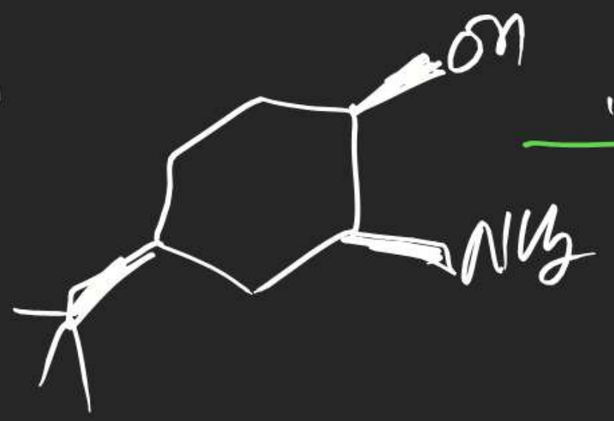
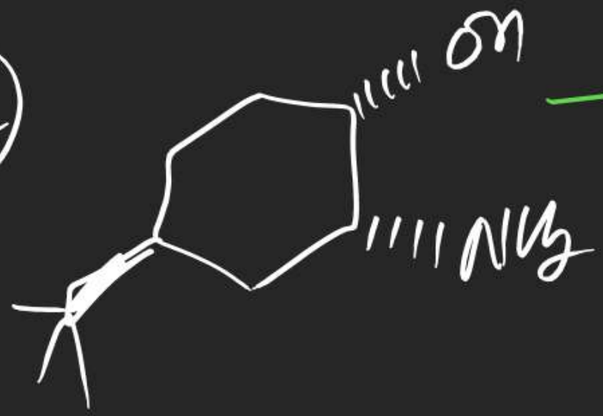
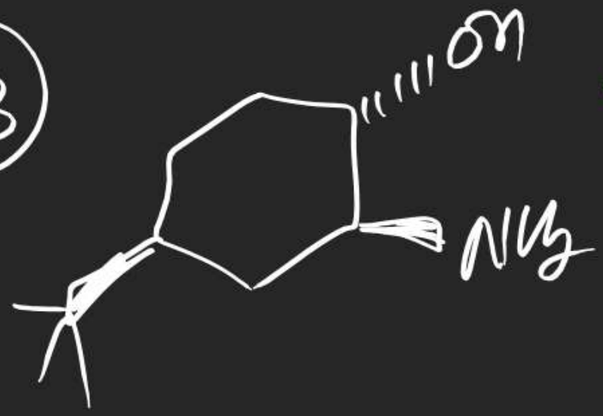
(50) 

(51) 

(52) 

(53) 

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(#) Diazotisation:-

⇒ Formation of diazo group from primary amine is known as Diazotisation

① $R-NH_2 \xrightarrow[\text{or } NaNO_2, H_2SO_4]{NaNO_2, HCl} \underbrace{\left[R-\overset{\oplus}{N}\equiv N \leftrightarrow R=\overset{\oplus}{N}=N\right]}_{\text{Diazonium}} \xrightarrow{-N_2} R^{\oplus}$

$R^{\oplus}$ → H_2O → R-OH (Major)

$Cl^{\ominus}$ → R-Cl (Major if NaCl)

$NO_2^{\ominus}$ → $R-NO_2$

$ONO^{\ominus}$ → R-ONO

Δ → Alkene

or

HNO_2

or

NaCl — Tilden Reagent

mech^n:

$NaNO_2 + HCl \longrightarrow HNO_2 + NaCl$

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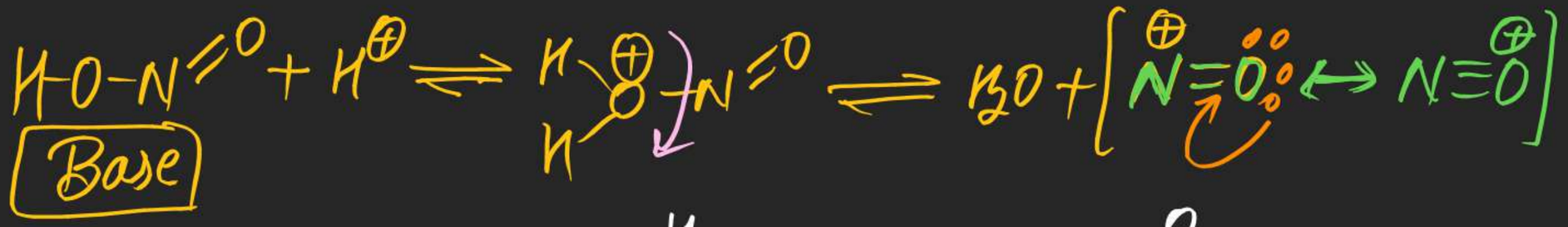

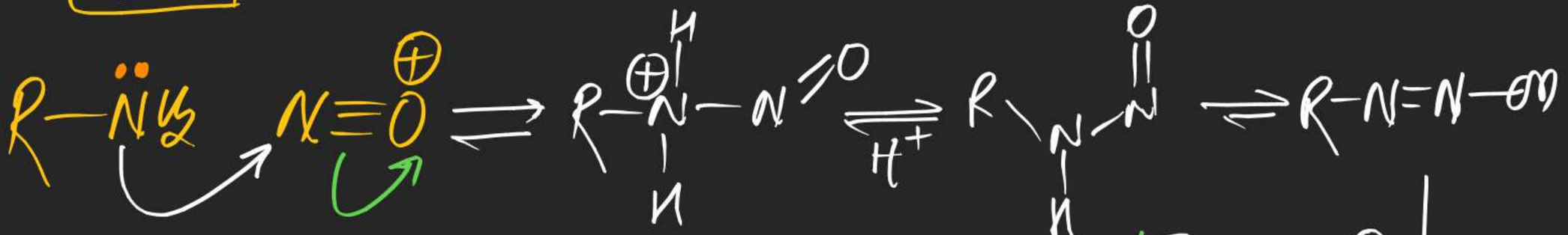

Note:

(i) HNO_2 behaves like Base

(ii) $\overset{\oplus}{N}O$ is Actual attacking Reagent

(iii) In case of aliphatic primary Amine, alcohol is obtained as a Product

(iv) Diazotisation is characteristic rxn of a primary amine.

(v) Arye primary amine gives stable diazonium salt b/w (0-5)°C