(8) CH_3-MgCl + $H-O-H \longrightarrow CH_4 + Mg(Cl)(OH)$

+ $H-O-R \longrightarrow CH_4 + Mg(Cl)(OR)$

+ $R-O-R' \longrightarrow$ No Rxn

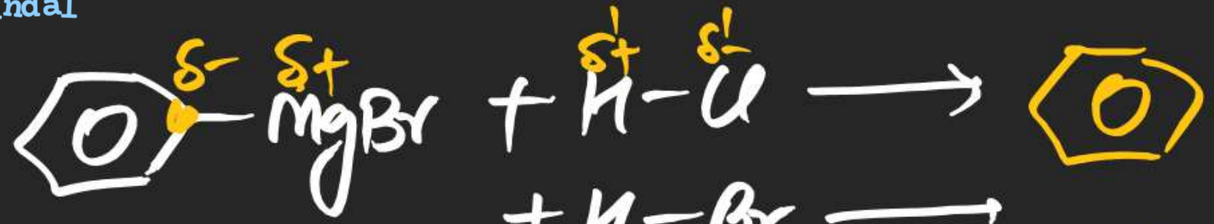
+ $H-NH_2 \longrightarrow CH_4$

+ $H-NHR \longrightarrow CH_4$

+ $H-NR_2 \longrightarrow CH_4$

+ $R'-NR_2 \longrightarrow$ No Rxn

+ $H-f \longrightarrow CH_4$

(9) 

$+ H-Br \longrightarrow$,,

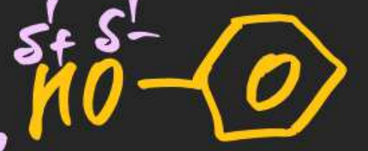
$+ H-I \longrightarrow$,,

$+ H-O-\overset{\overset{O}{\|}}{C}-R \longrightarrow$,,

$+ H-NH-\overset{\overset{O}{\|}}{C}-R \longrightarrow$,,

$+ H-\underset{R}{N}-\overset{\overset{O}{\|}}{C}-R \longrightarrow$,,

$+ H-O_3SR \longrightarrow$,,

(10) $CH_2=\overset{\delta-}{C}H-\overset{\delta+}{Mg}I$ +  $\longrightarrow$ $CH_2=CH_2$ + 

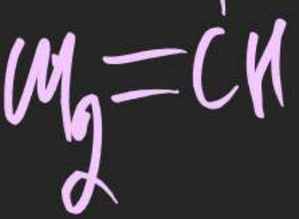
+ $H-C\equiv C-R$ $\longrightarrow$ || + $IMg-C\equiv C-R$

+ $H-C\equiv C-H$ $\longrightarrow$ || + $IMg-C\equiv C-H$

+ $H-CH_2-NO_2$ $\longrightarrow$ || + $IMgCH_2-NO_2$

+  $\longrightarrow$ || + 

+  $\longrightarrow$ || 

+ $D-C\equiv C-R$ $\longrightarrow$ 

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(11) $R-MgX + CH_2=CH_2 \longrightarrow$ NO Rxn

$+ CH_3-CH=CH_2 \longrightarrow$ NO Rxn

$+ CH_3-CH_3 \longrightarrow$ NO Rxn

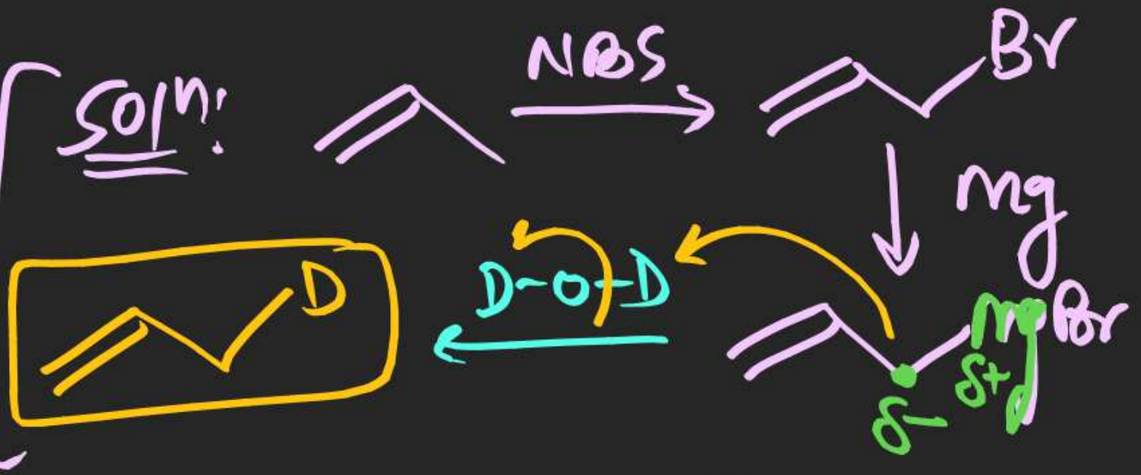
(12) 

(i) NBS

(ii) Mg

(iii) D_2O

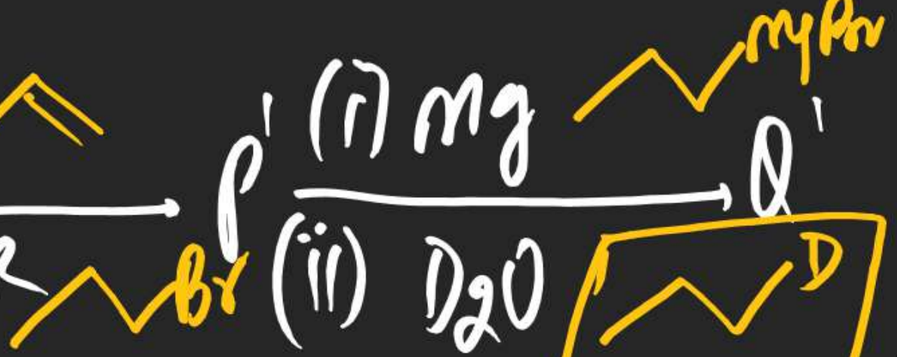
Soln:



(13) 

(i) Alc. KOH

(ii) HBr / ROOR



(i) Mg

(ii) D_2O

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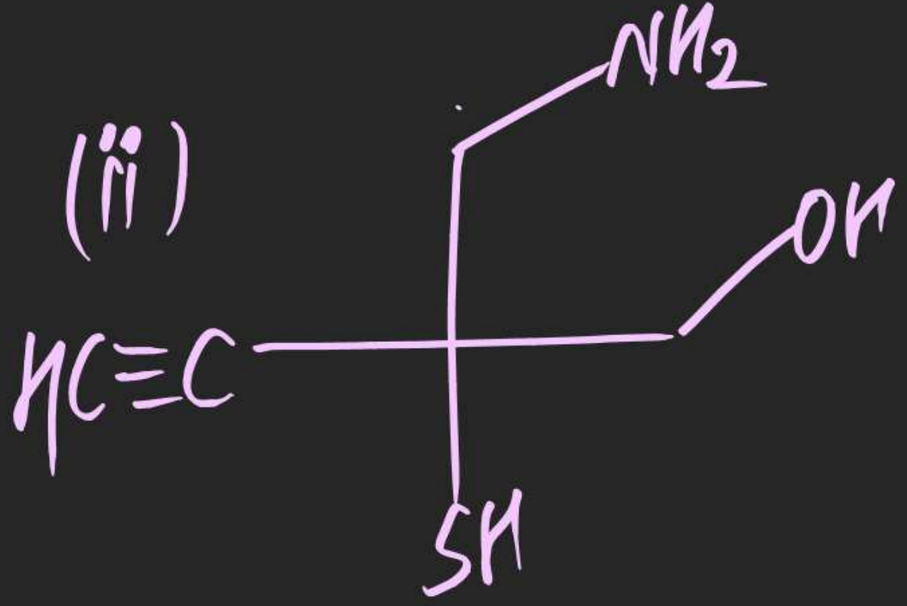
(14) Total no. of moles of R-MgX Consumed By following

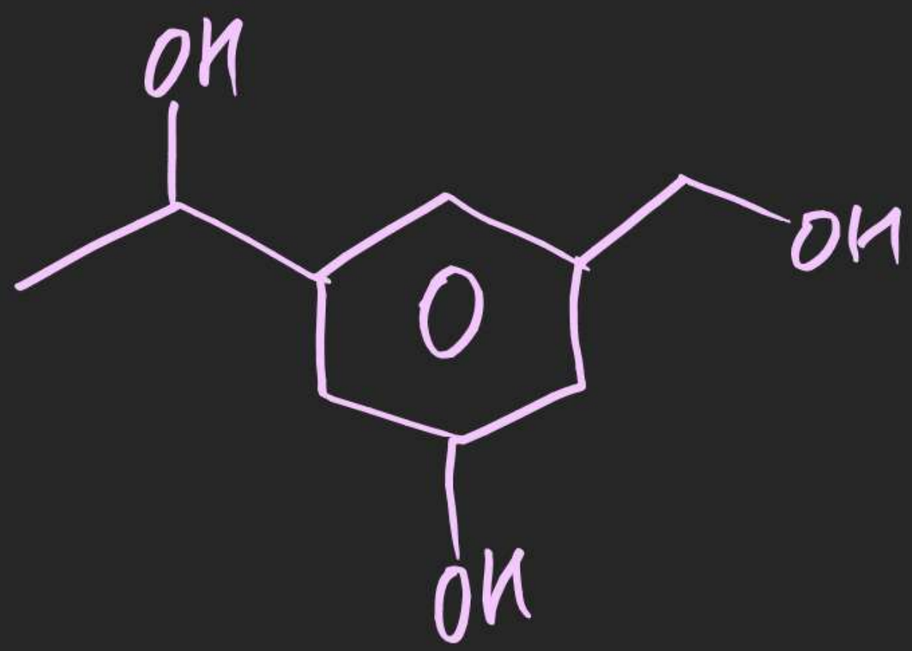
(i)

(3)

(ii)



(iii)



(iv)

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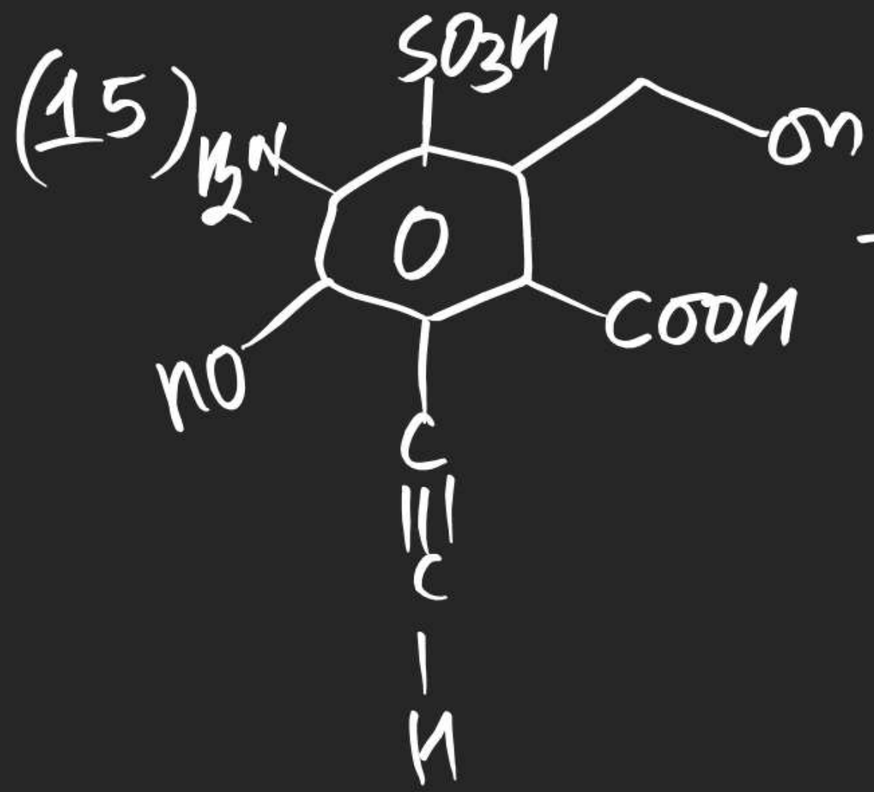
(15)



CH_3-MgCl

(1eq)

"

(2eq)

"

(3eq)

"

(4eq)

"

(5eq)

(16)

Cement

(i) Mg in THF

(ii) H_2O

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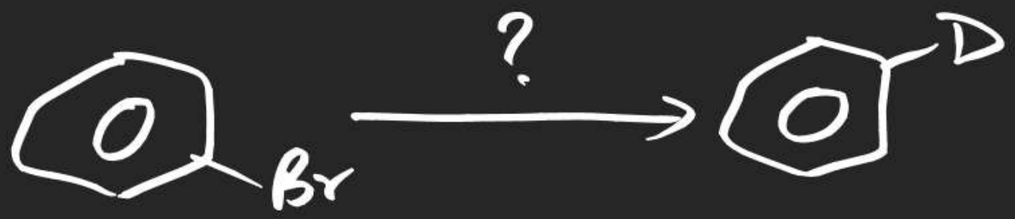
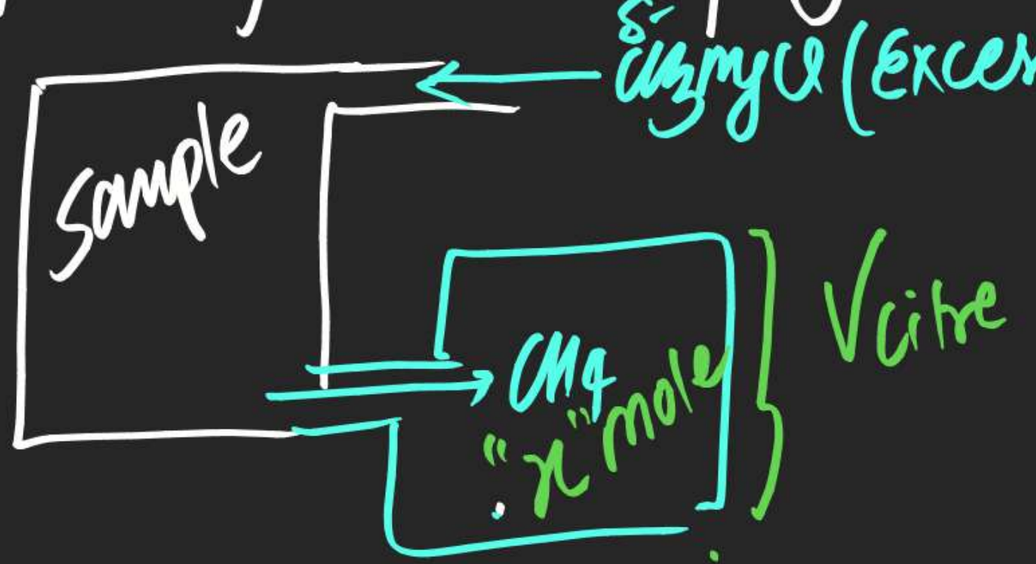
(17) 

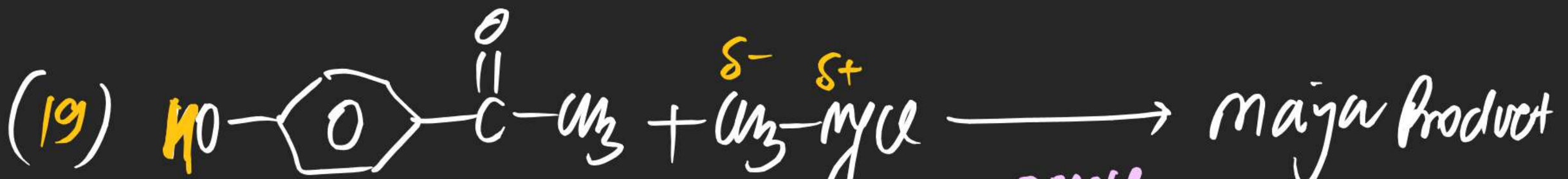
(#) Zerewitnoff's Active Hydrogen determination method:-

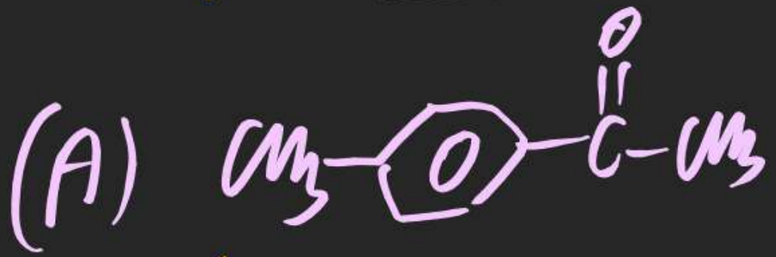
⇒ Sample is containing "x" no. of Active/Acidic Sites. We can find "x" By passing Excess of CH_3MgBr & analysing Volume of CH_4 gas liberated at STP

$$x = \frac{V_{litre}}{22.4}$$

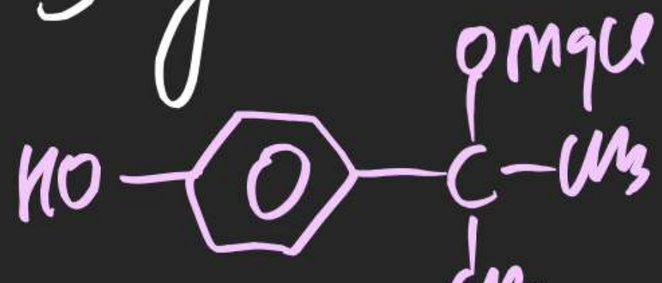


(18) Find Volume of CH_4 gas evolved at Rxn b/w 170 gm of Methyl Magnesium Bromide with 13 gm of Ethyne at STP.

(19) 

(A) 

(B) CH_4

(C) 

(D) 

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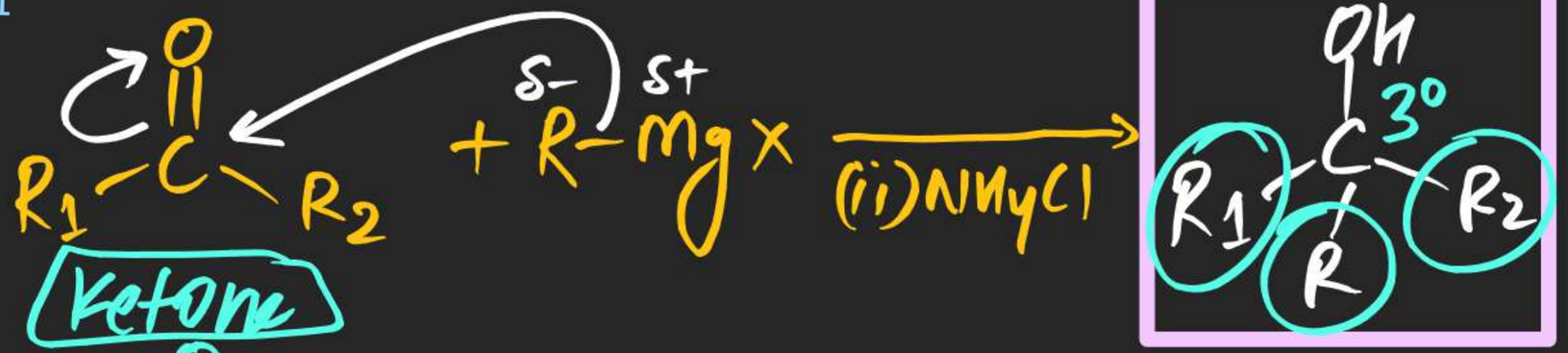
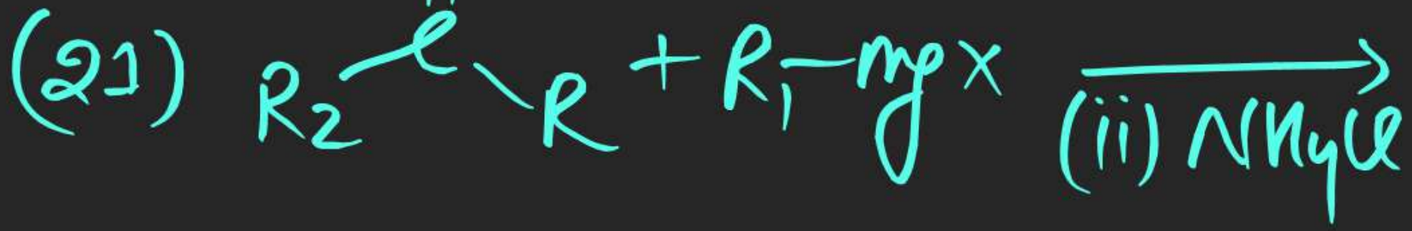
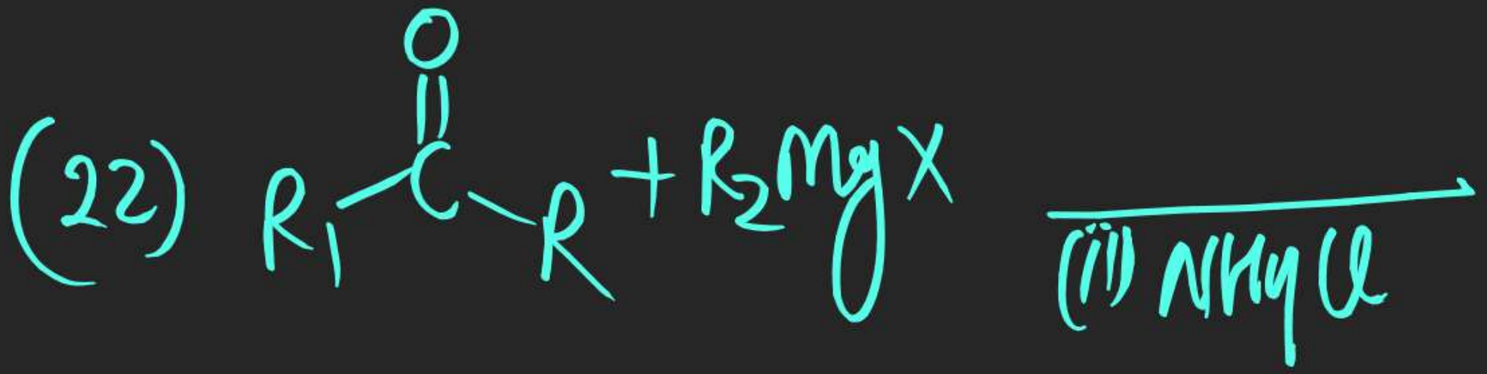
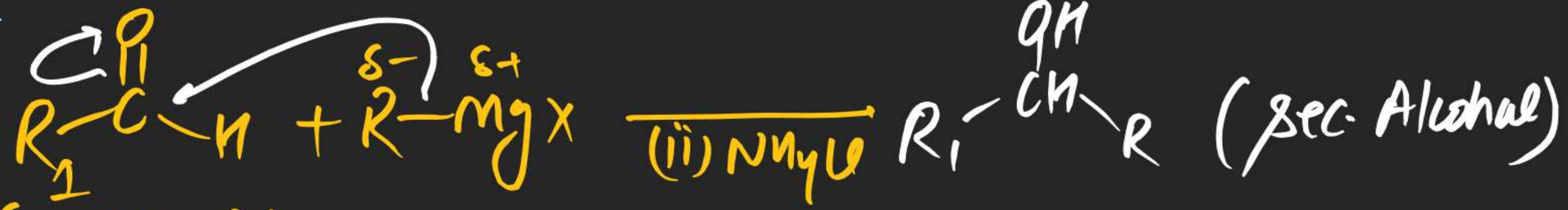
(20) 

(21) 

(22) 

(23) 

(Aldehyde)

(24) 

(25) 

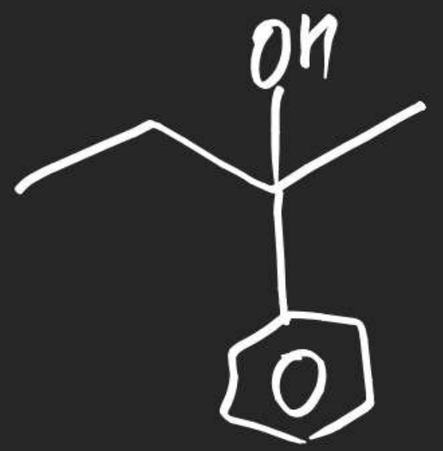
Formaldehyde

Note! (*) Ketone $\xrightarrow{G.R}$ 3° R–OH

Aldehyde $\xrightarrow{\text{"}}$ 2° R–OH

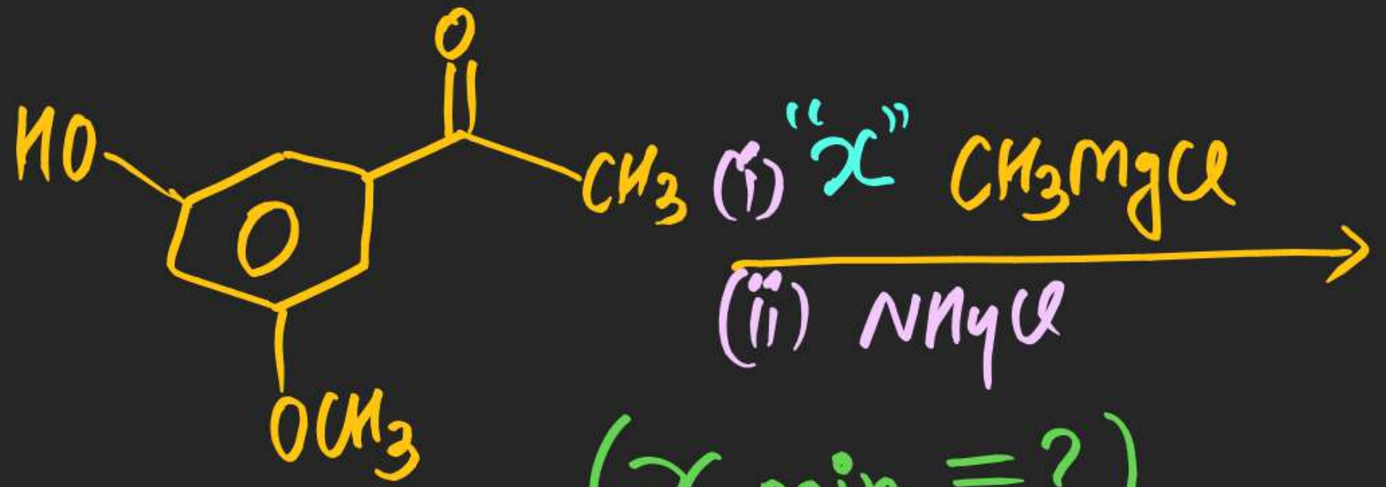
Except $H-\underset{\underset{O}{\|}}{C}-H \xrightarrow{\text{"}}$ 1° R–OH

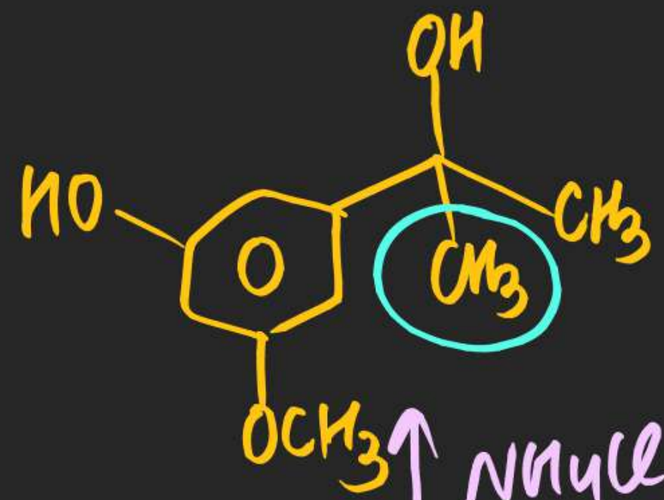
(26) Carbonyl Comp + G.R $\xrightarrow[\text{(ii) NH}_4\text{Cl}]{}$



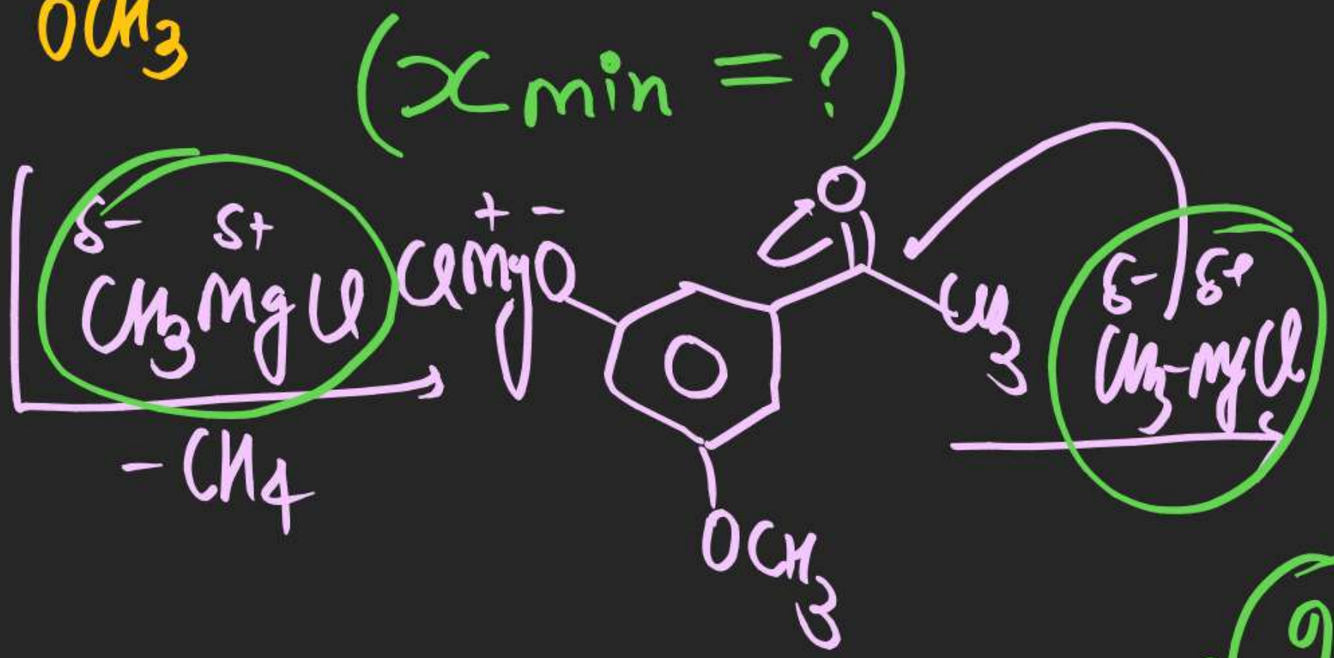
(27) ? + ? $\xrightarrow[\text{(ii) H}^+]{}$

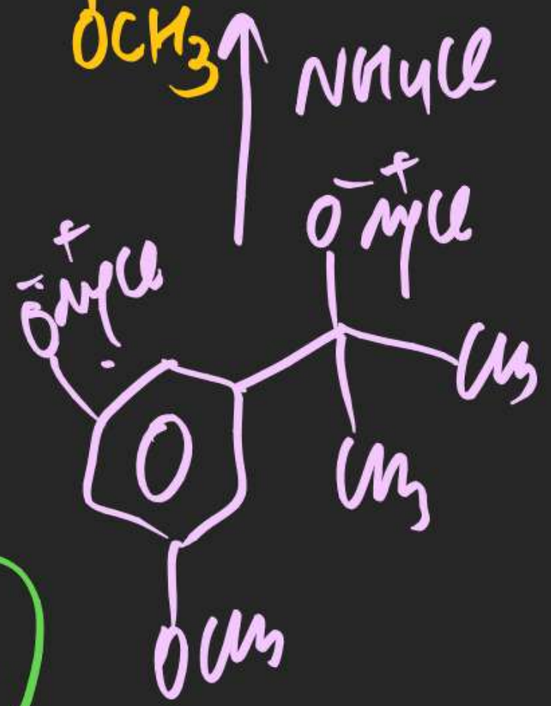
(28)





($x_{min} = ?$)





Ans 2

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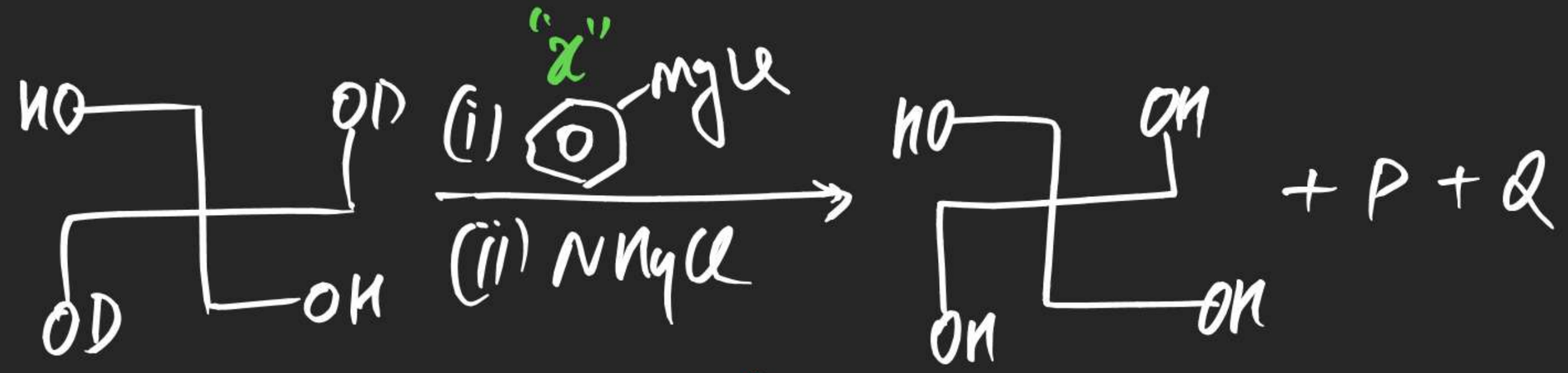
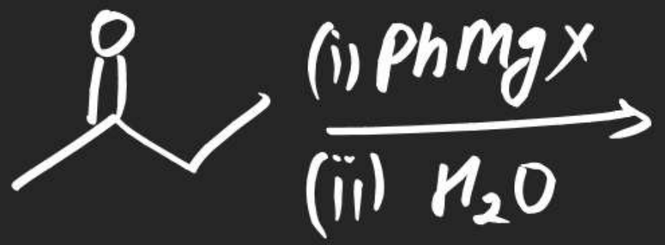
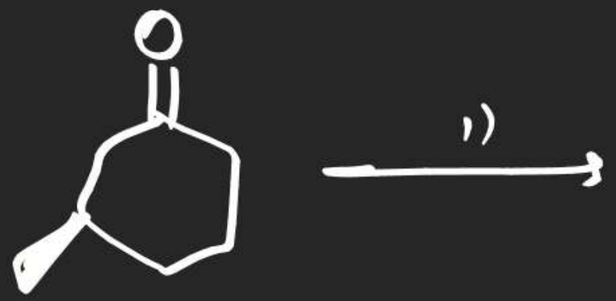
(29) 

(Find $x_{min} = ?$)

(30) 

(31) 

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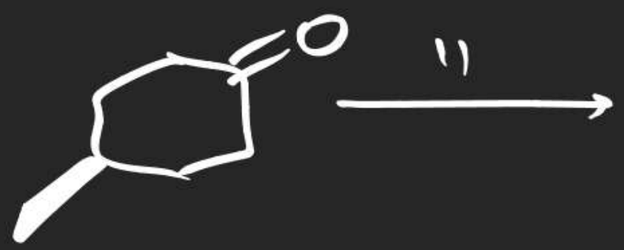
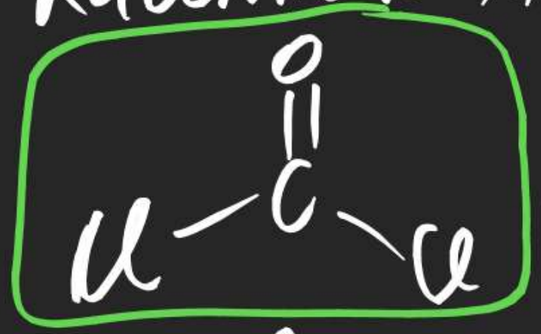
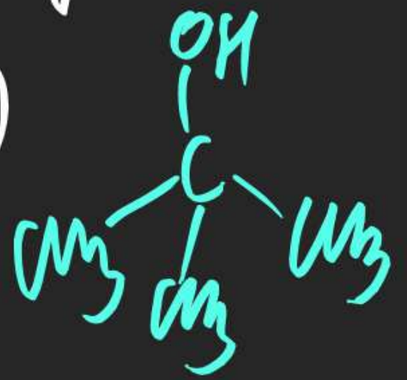
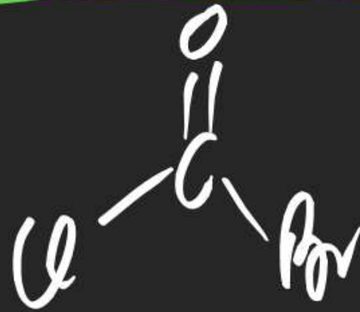
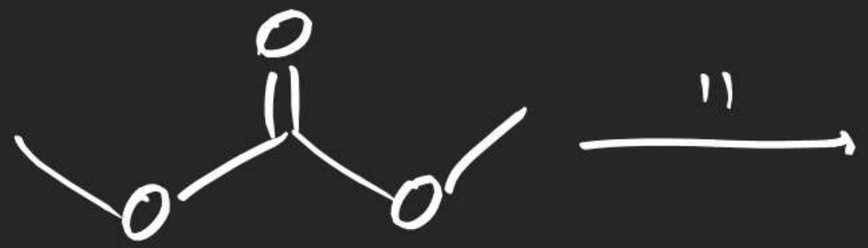
(32)  [H]

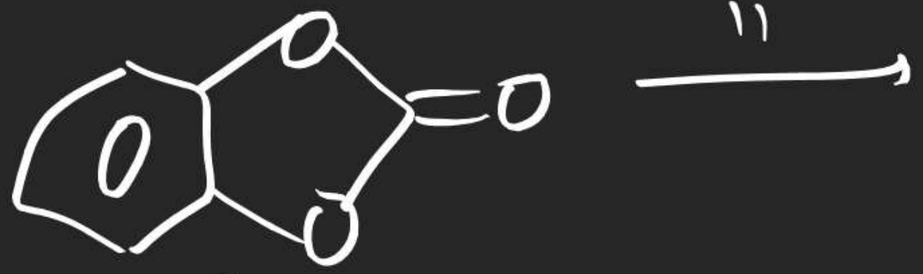
(33) Total No. of Carbonyl Compounds with mol. formula $C_6H_{12}O$ which on Rxn with Grignard gives Racemic mixture followed by Acidification.

(34)  (i) CH_3MgCl (excess) (ii) NH_4Cl → 

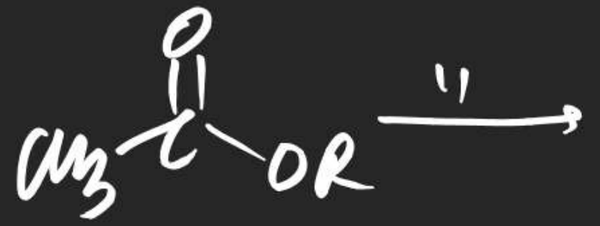
(35)  [H] →

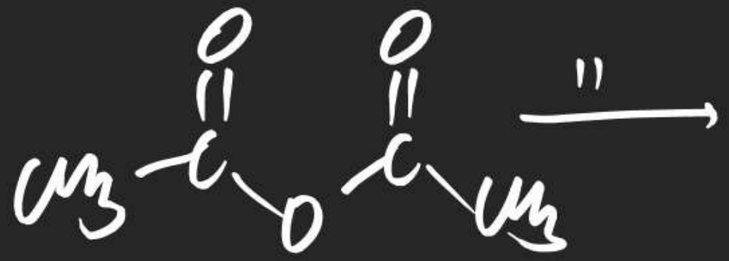
(36) 

(37) 

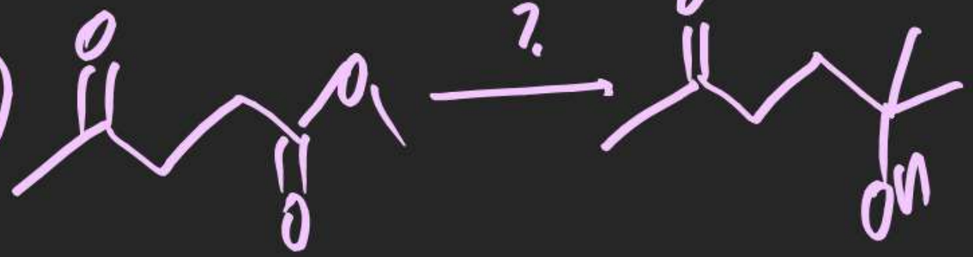
(38) 

(39) 

(40) 

(41) 

(42) 

(43) 

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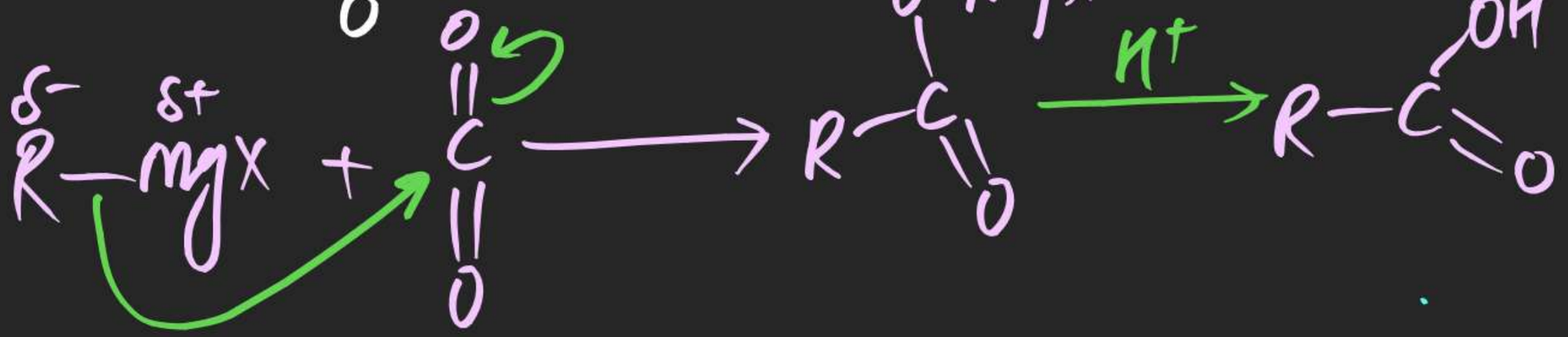
M.M.I.U.P.:

(44) $R-MgX + \underset{\underset{O}{\|}}{\overset{O}{\|}}{C}{=}O \xrightarrow[\text{(ii) } H^{\oplus}]{}$

Mechⁿ:



(45) $R-MgX + SO_2 \xrightarrow{H^{\oplus}}$

(46) $R-MgX + CS_2 \xrightarrow{H^{\oplus}}$

(47) $R-MgX + SO_3 \xrightarrow{H^{\oplus}}$

(48) $R-MgX + S \xrightarrow{H^{\oplus}}$

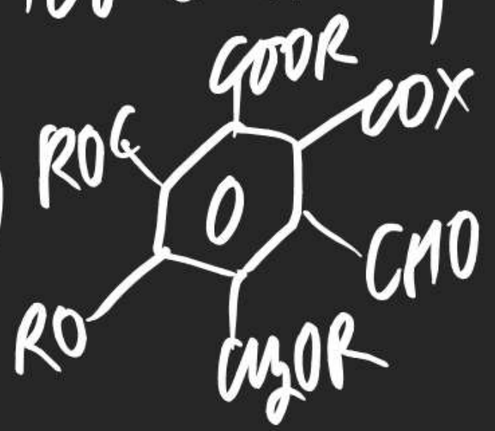
(49) $R-MgX + O_2 \longrightarrow$ "

(50) $R-MgX + O_2 \longrightarrow$ "

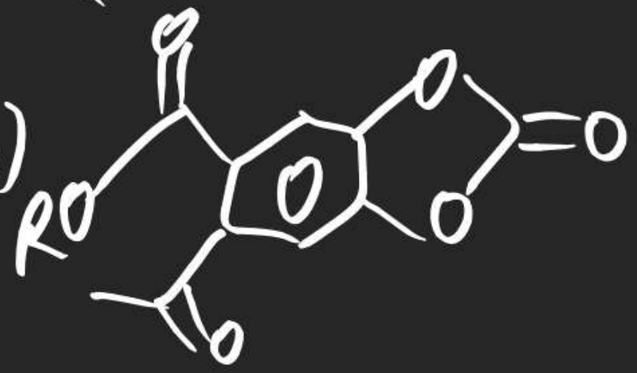
2 : 1

(51) Total no. of moles of G.R consumed per mole of following

(a)



(b)



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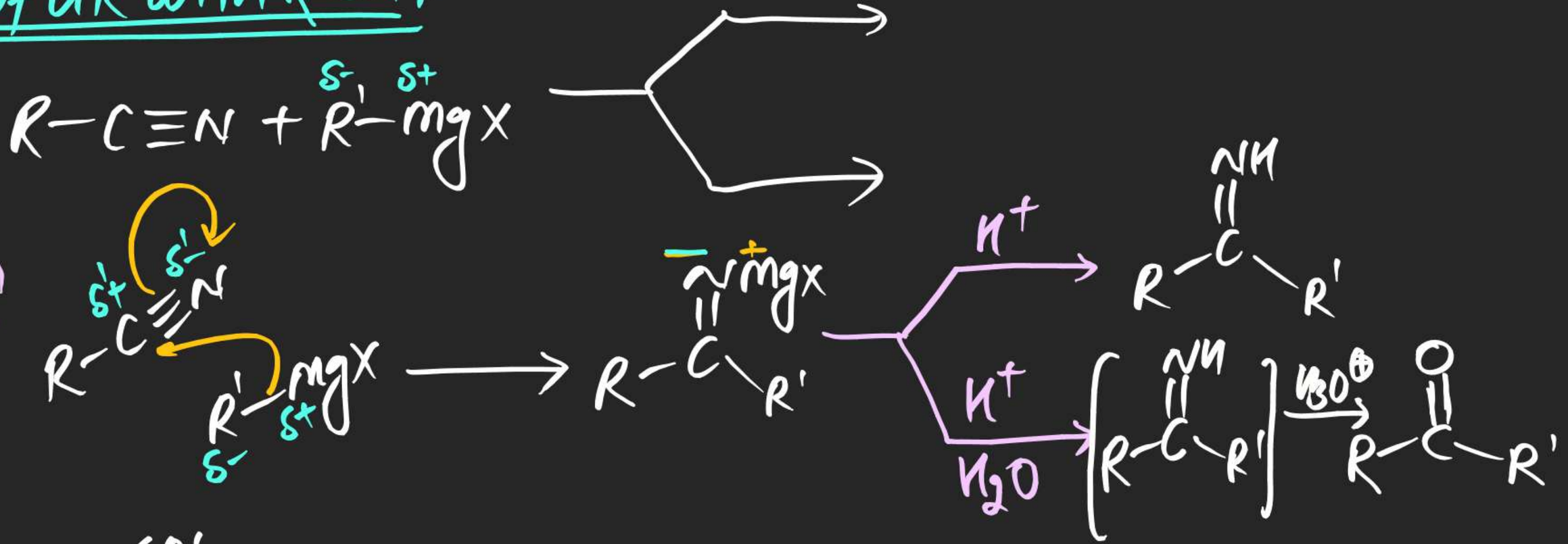
Rxn of GR with R-CN :-

(52)



(53) 

(54) 

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(#) difference b/w Reactivity of R-MgX & RLi

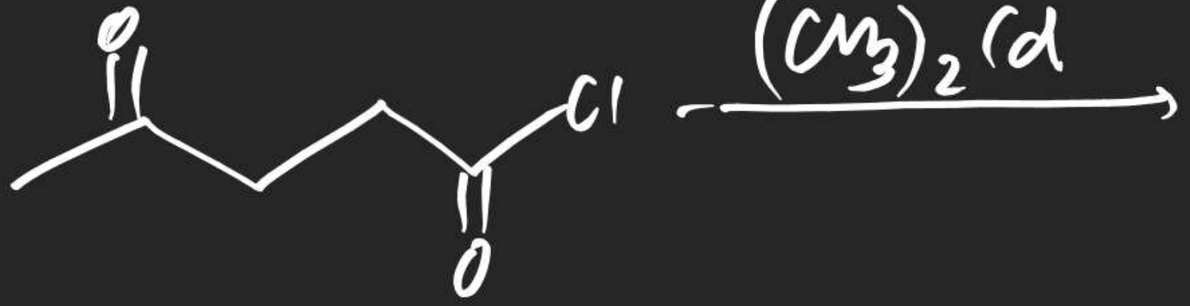
(55) (a) $CO_2 + R\text{-}MgX$ (Excess) $\xrightarrow{(ii)\ H^+}$ $R\text{-}C(=O)\text{-}OH$

(b) $CO_2 + RLi$ (Excess) $\xrightarrow{(ii)\ H^+}$ $R_2C=O$

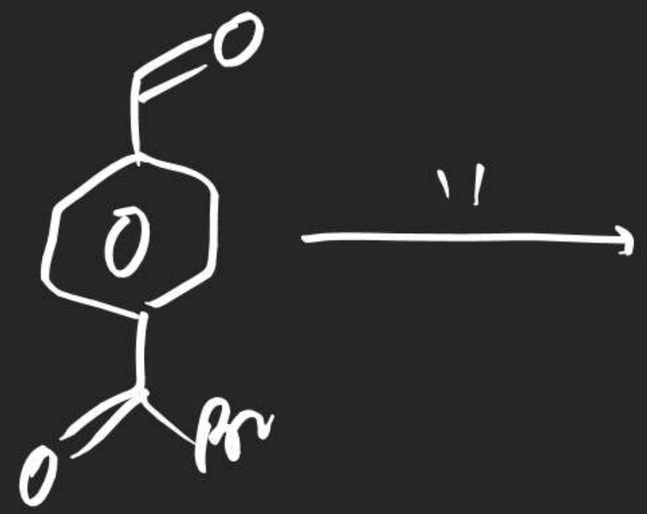
Mechⁿ (b)

Note R_2Cd is less Reactive & Reacts only with Acid halide.

$\left(\begin{matrix} R \\ R \end{matrix}\!\!>\!C=O\right)$

(56) 

$\xrightarrow{(CH_3)_2Cd}$

(57) 

$\xrightarrow{\text{II}}$

(58) $CH_3-MgX + CH_3-Cl \longrightarrow$

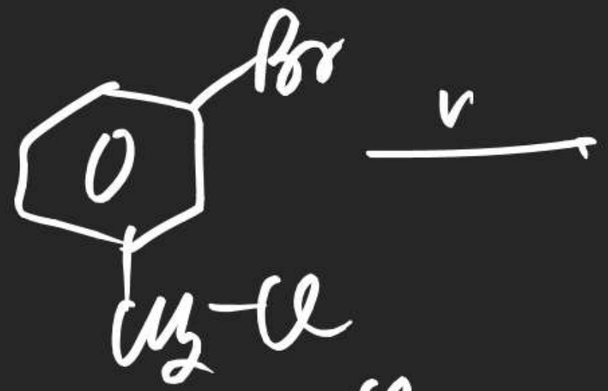
(59) 

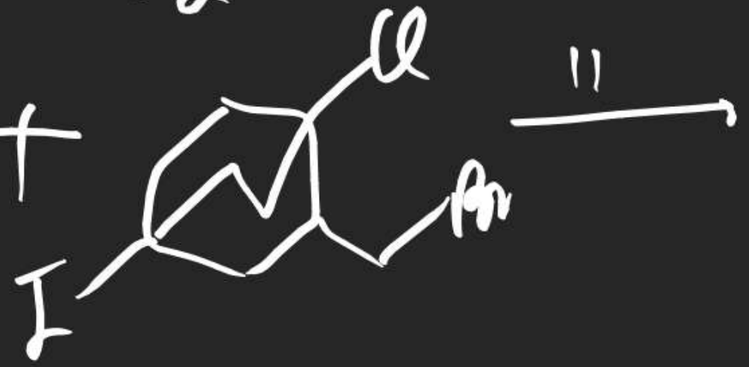
$\xrightarrow{\text{II}}$

(60) $R-MgX + \text{>}-Cl \xrightarrow{E^2}$

(61) $R-MgX +$  $\longrightarrow$ NO R^{x^n}.

(62) $R-MgX +$  $\longrightarrow$

(63) $CH_3-MgCl +$  $\xrightarrow{V}$

(64) $CH_3-MgCl +$  $\xrightarrow{II}$

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(65) $R\text{-}MgX$ (Excess) $+ SnCl_4 \longrightarrow R_4Sn$

(66) 〃 $+ TiCl_3 \longrightarrow$

(67) 〃 $+ ZnCl_2 \longrightarrow$

(68) 〃 $+ CuCl \longrightarrow$

(69) 〃 $+ PbCl_4 \longrightarrow$

(70) 〃 $+ PbCl_2 \longrightarrow$

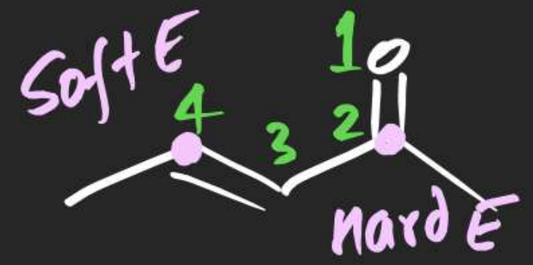
(71) $CH_2(Cl)-CH_2(OCH_3) + CH_3-MgCl \longrightarrow$

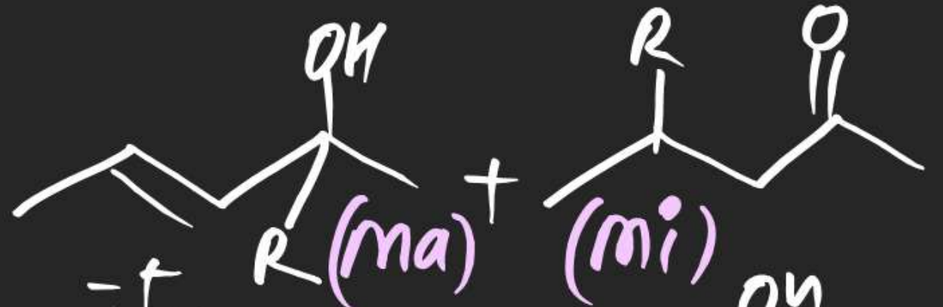
(72) $CH_3-MgCl + NC-Cl \longrightarrow$

(73)  $+ \quad NC-CN \longrightarrow$

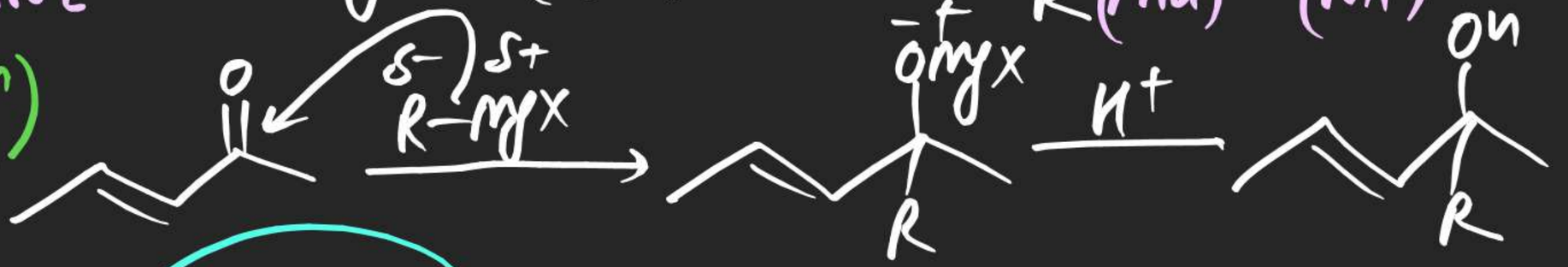
(74) $CH_3-MgCl +$  $\xrightarrow{(ii)\ H^+}$

(A) Conjugate addⁿ of GR:

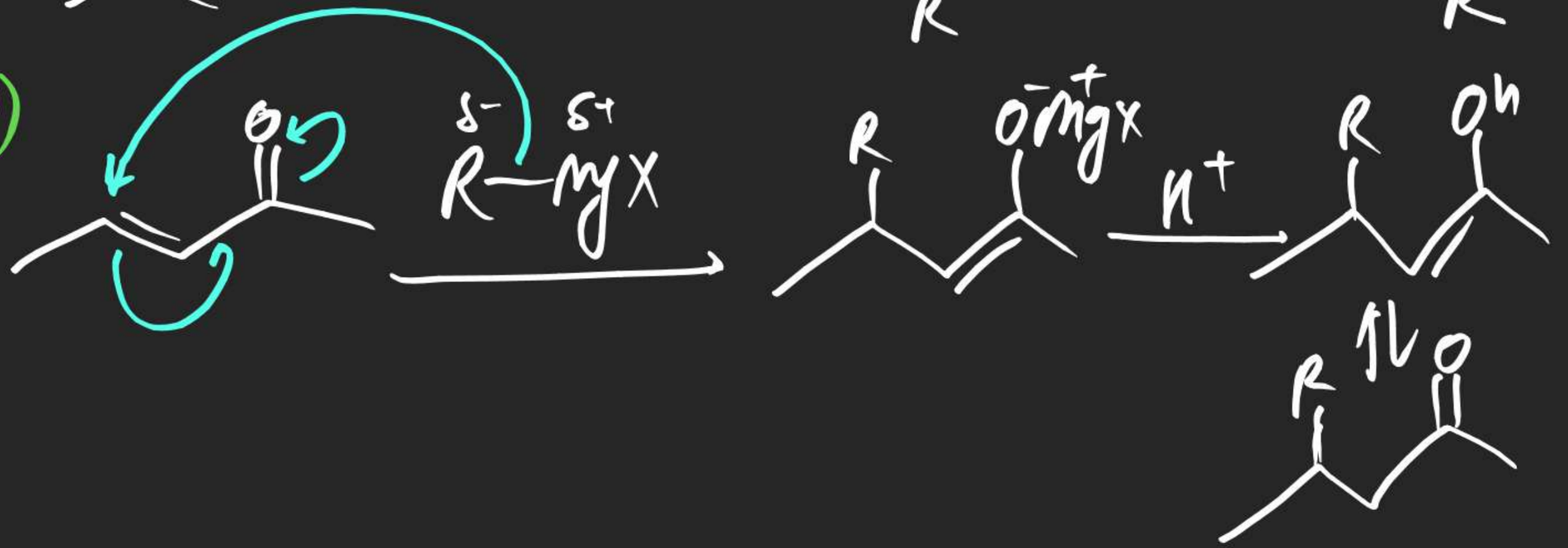
(75) 

+ Hard NU
+ R–MgCl $\xrightarrow{\text{(ii) } H^+}$ 

Soln: (1,2 addⁿ)



(1,4 addⁿ)



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(76) 

(i) R_2CuLi

(ii) $H^{\oplus}$

(77) 

(i) R-MgX

(ii) NH$_4$Cl

(i) R-MgX / CuX

(ii) NH$_4$Cl

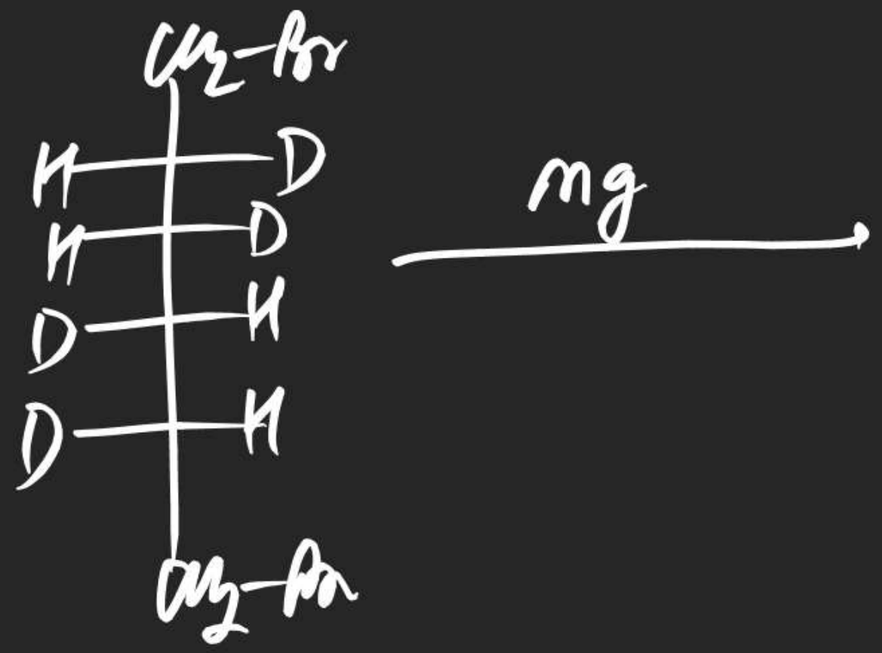
(i) R_2CuLi

(ii) NH$_4$Cl

(78)  $\xrightarrow[\text{(ii) } NH_4Cl]{\text{(i) } CH_3MgX}$

(79)  $\xrightarrow[\text{(ii) } NH_4Cl]{\text{(i) } CH_3MgX \text{ (3eq)}}$

(84)



(85) $CH_2(Br)-CH=CH-CH_2(Br)$ $\xrightarrow{mg}$