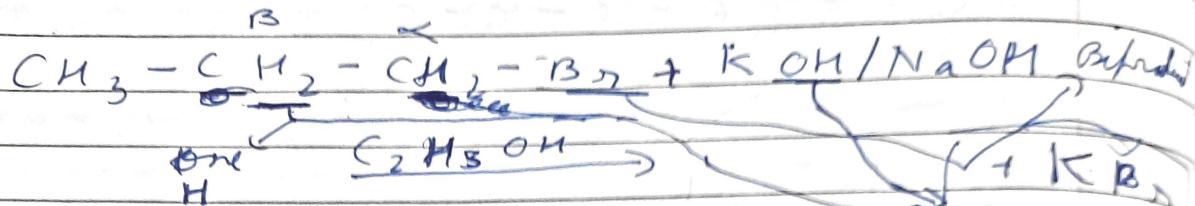


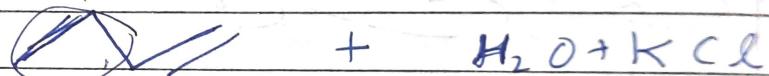
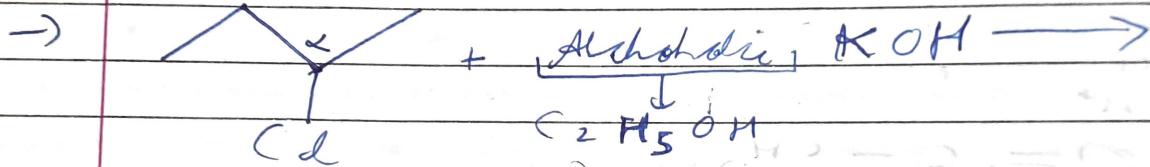


\* Elimination Reaction ( $\alpha - \beta$  elimination rxn)  
 / (Beta elimination Rxn)

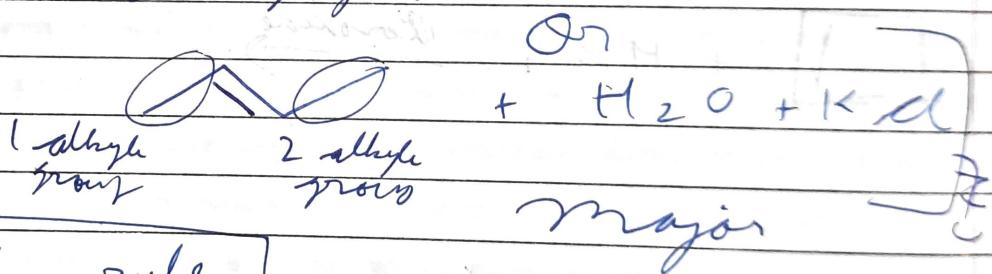


H can come out  
from any

main product

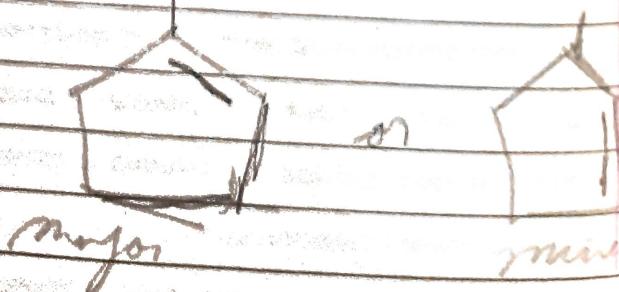
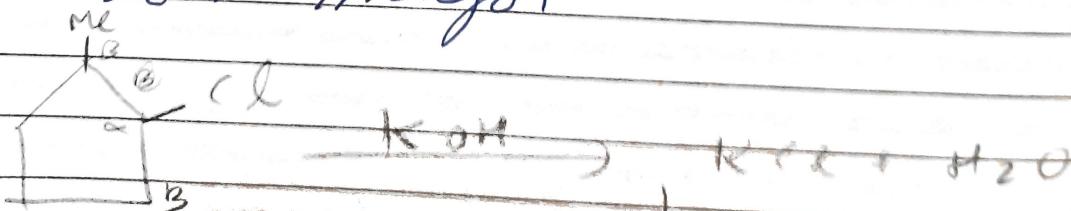


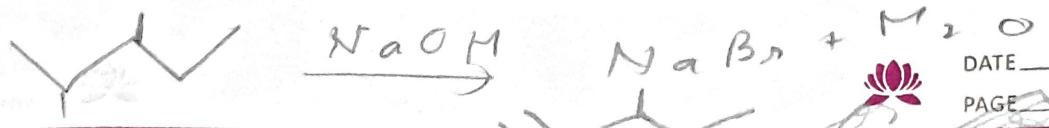
\* Lutzef rule (alkyl group)



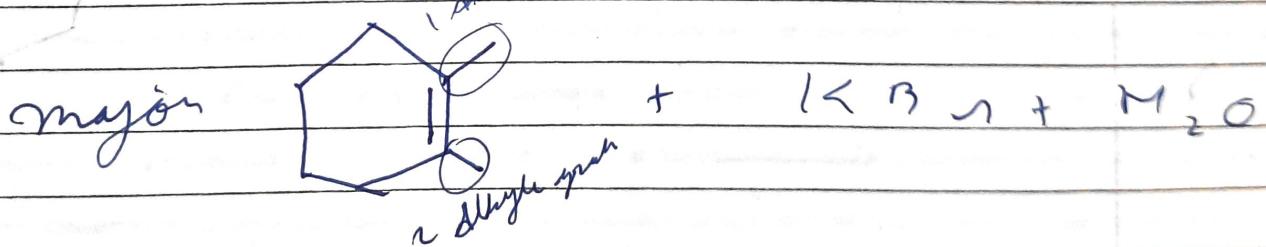
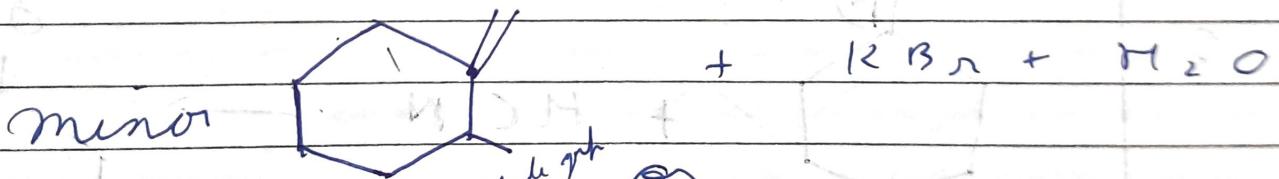
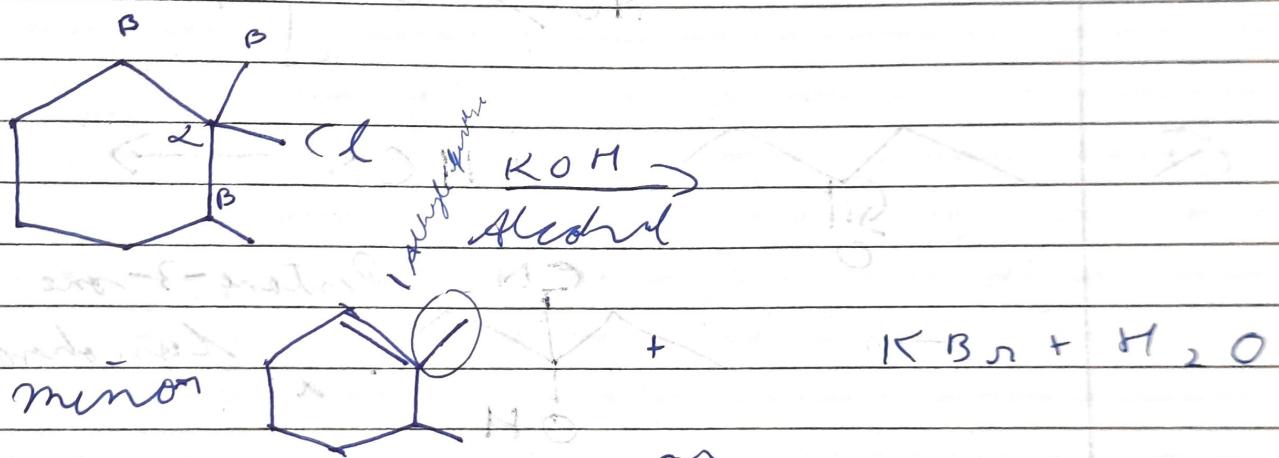
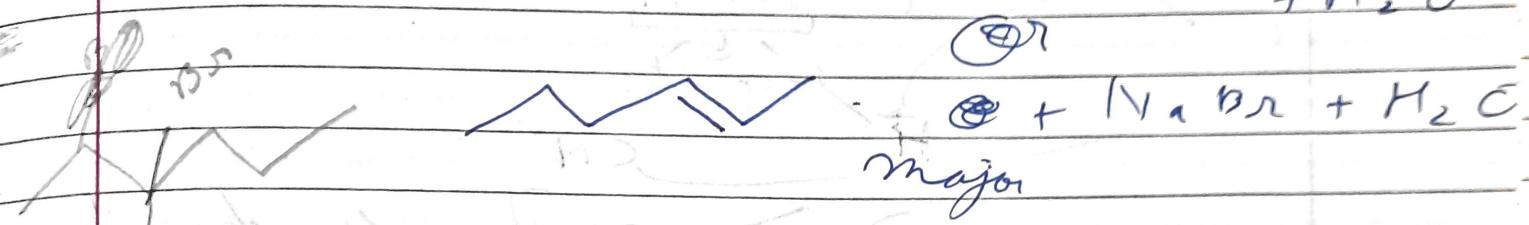
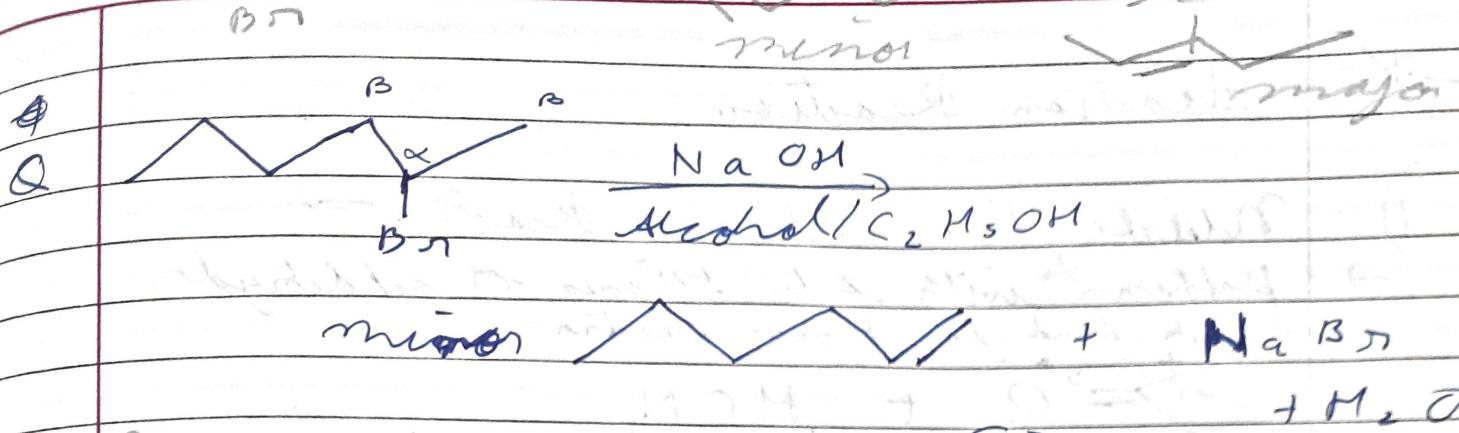
Lutzef rule

The one which has more alkyl group attached to the C double bond is considered major





DATE \_\_\_\_\_  
PAGE \_\_\_\_\_



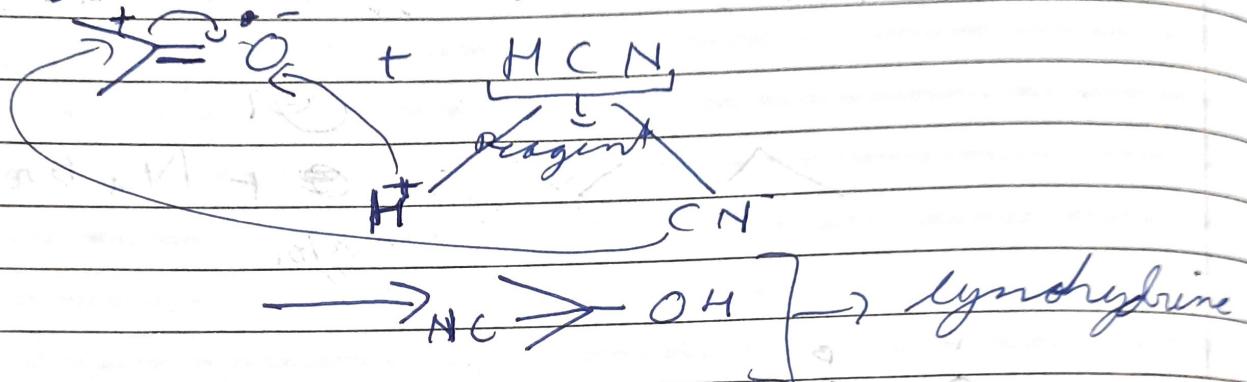


## \* Addition Reaction

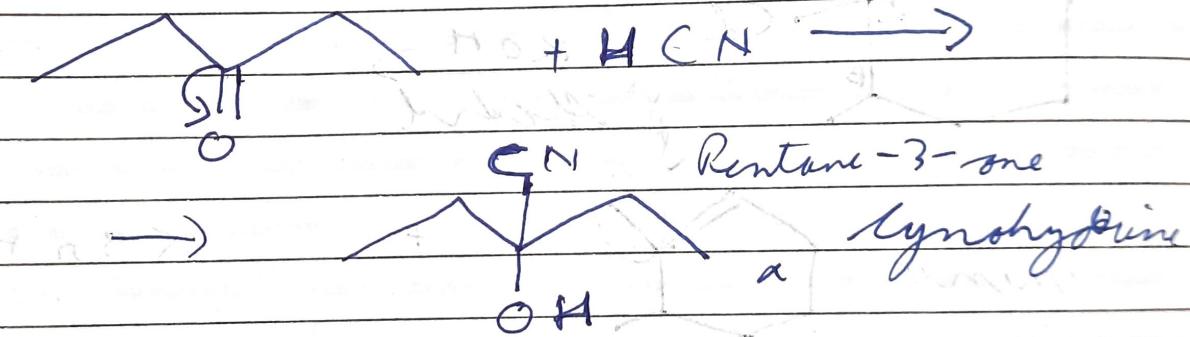
1)

Nucleophile Addition Reaction →

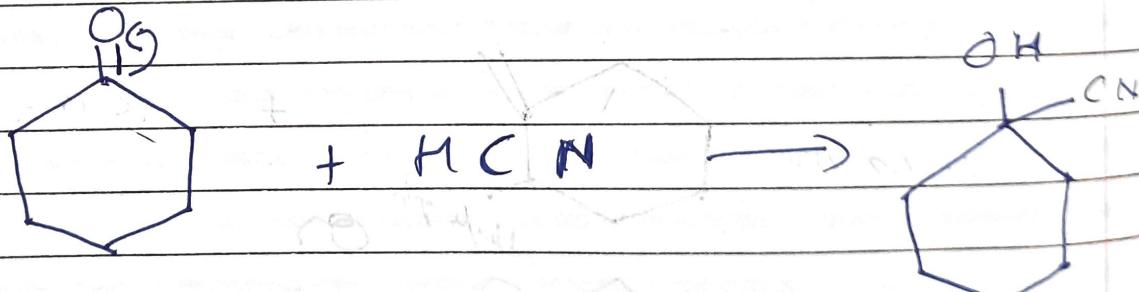
→ Happens with only ketones or aldehydes  
Break bond towards more electro-ve



&amp;



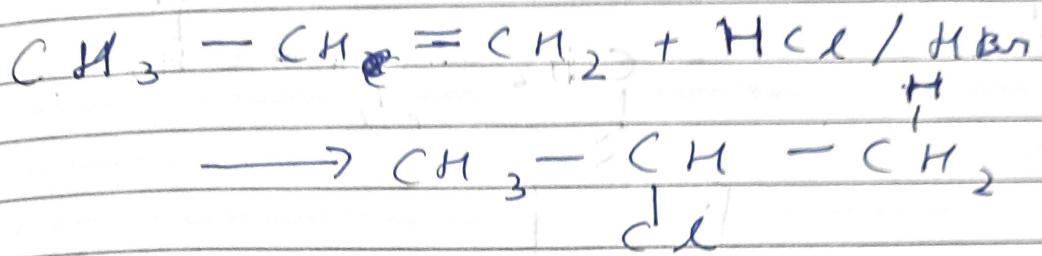
&amp;





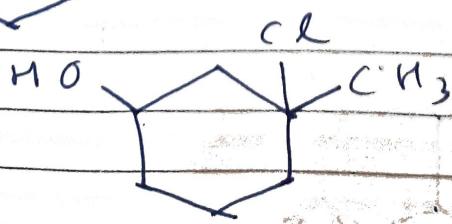
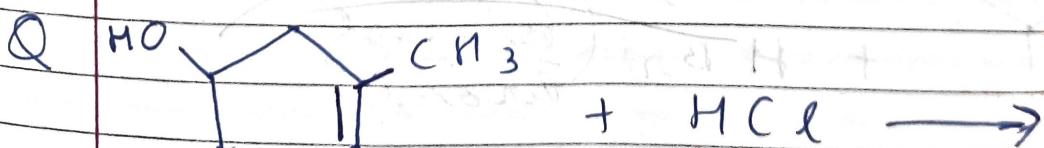
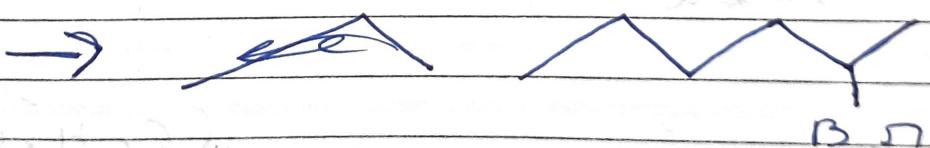
## Markonikov Rule

2) Electrophilic Addition Reaction  $\rightarrow$



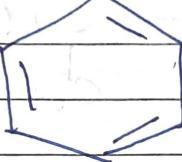
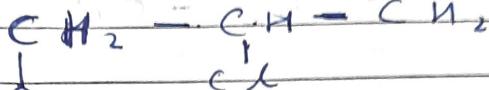
### \* Markonikov Rule $\rightarrow$

The  $-ve$  part of reagent ( $\text{A} / \text{Br}$ ) will attack the  $\text{C}$  of double bond which has less hydrogen. and for break the double bond



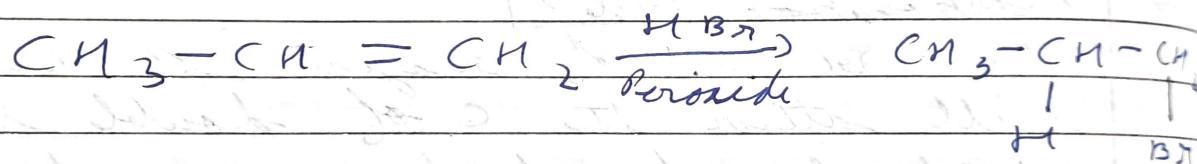
DATE \_\_\_\_\_  
PAGE \_\_\_\_\_

CH2-CH=CH2 look here only  
no role of Benzene in this



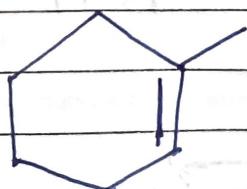
3) Free Radical Addition Reaction

-> Happens in the presence of  $\text{H}_2\text{O}_2$  (from)

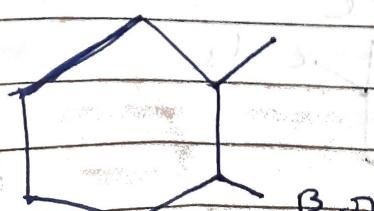


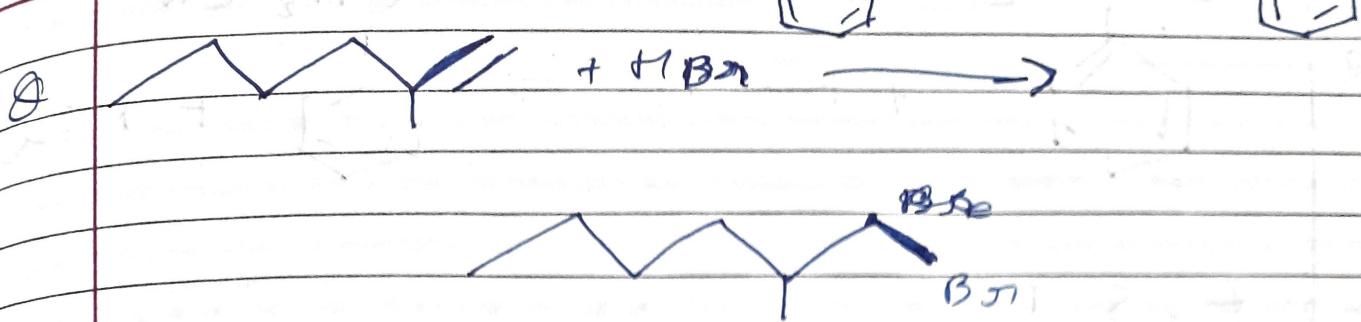
\* Anti markownikov Rule double bond

-> -ve part goes to C where hydrogen is more



$(\text{C}_6\text{H}_5\text{COO})$   
 $\xrightarrow[\text{Peroxide}]{\text{Benzoyl}}$

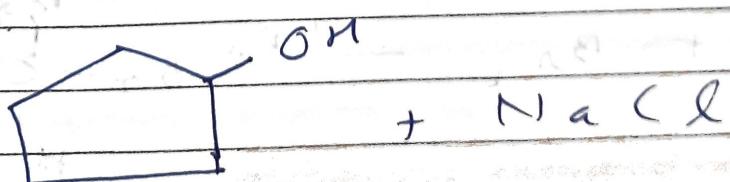
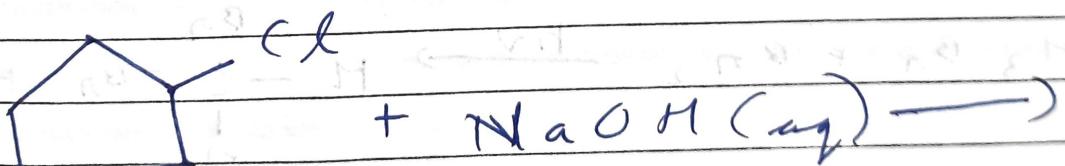
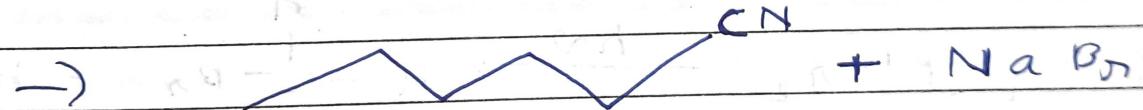
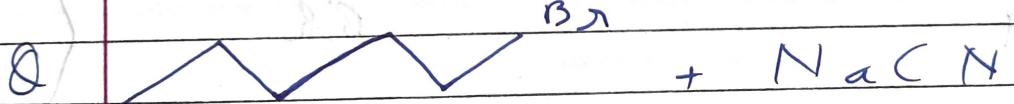
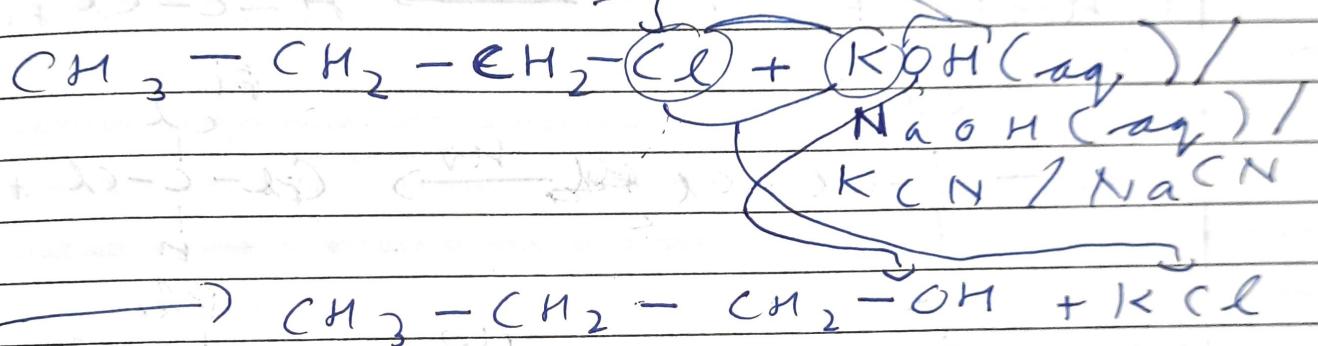




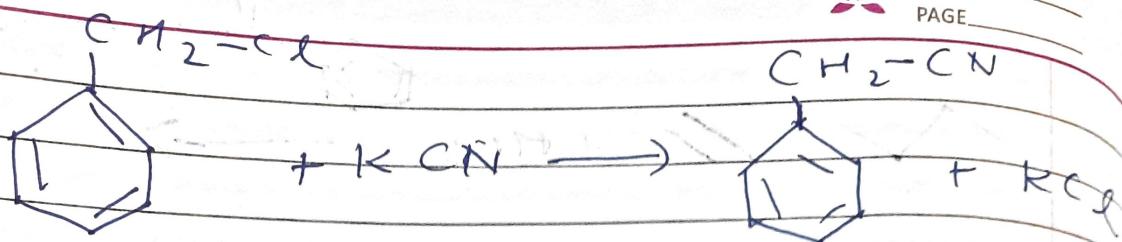
### \* Substitution Reaction

1)  $\textcircled{\times}$  NSR

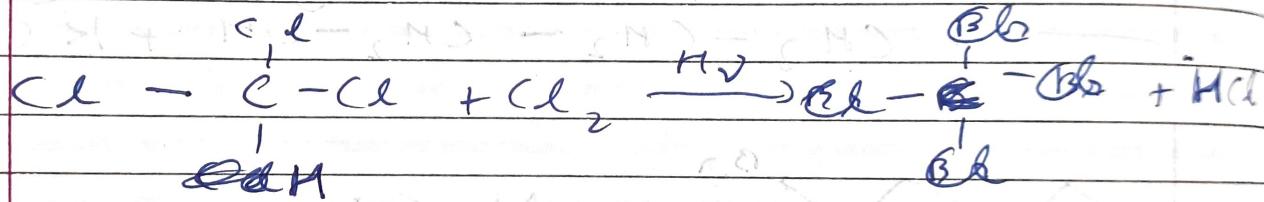
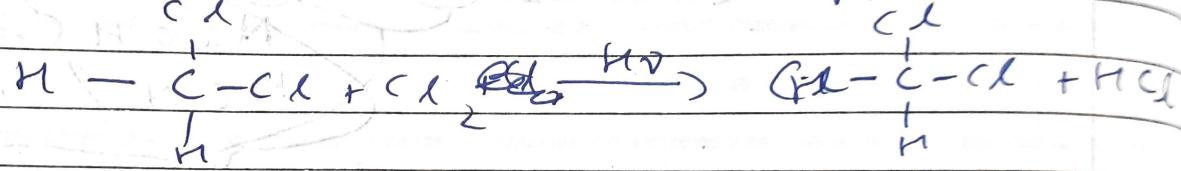
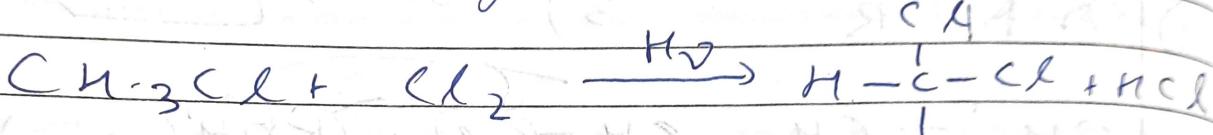
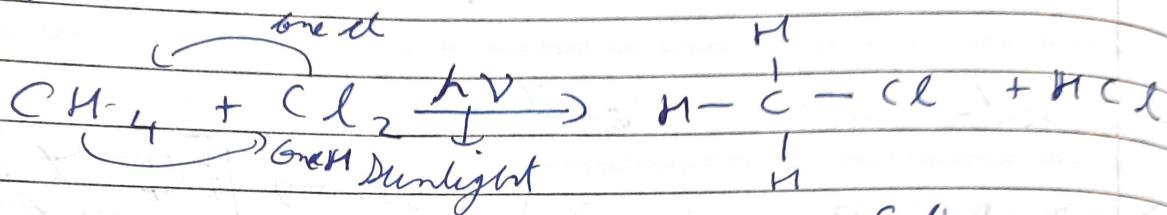
3) ESR  $\rightarrow$   $(\text{DIY})_{\text{notes}}$



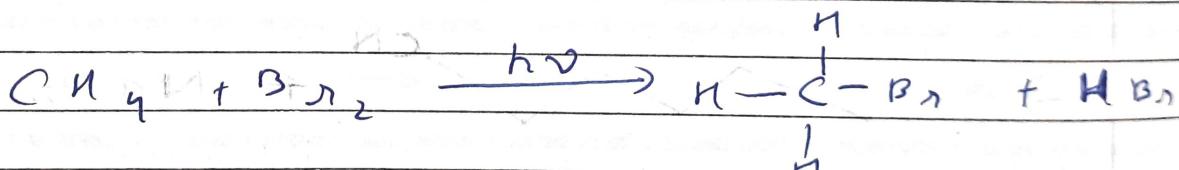
Q



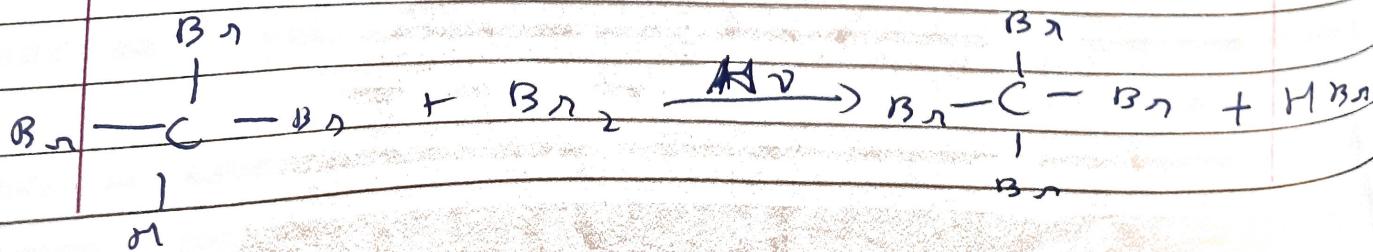
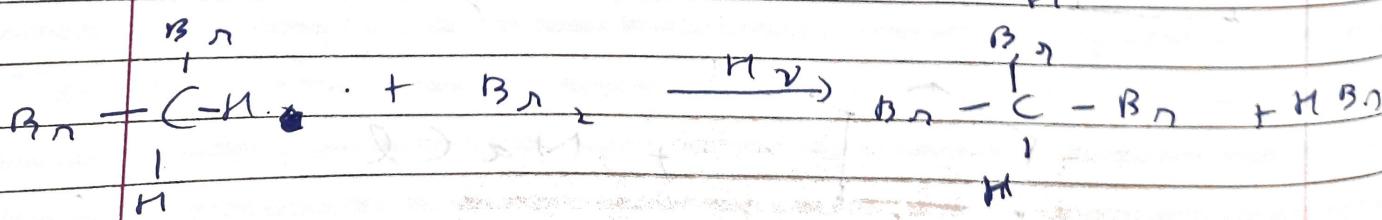
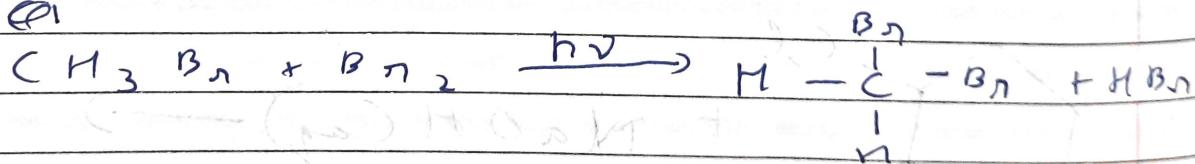
Q) F.S.R



Q

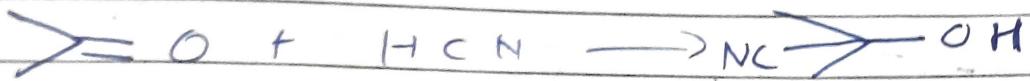


Q1

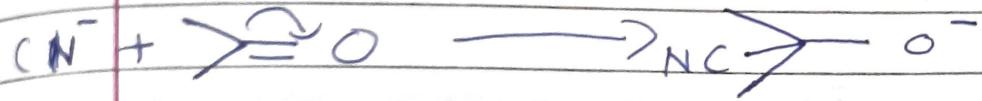




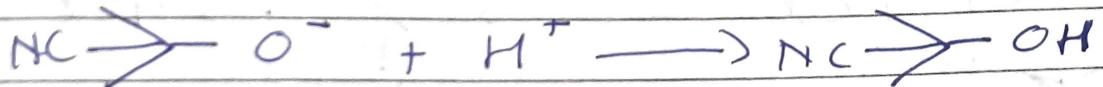
## \* N.A.R [Mechanism]



Step 1 | Rate determining step  $\rightarrow$  slowest step



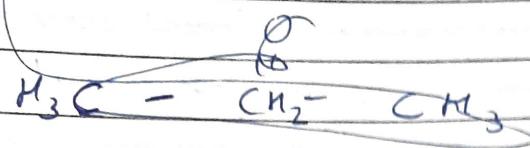
Step 2 - Fast step



## \* Aromaticity

④ Hückel's Rule:  $(4n+2)\pi$  electron  
 $n$  should be  $0, 1, 2, 3, \dots \infty$

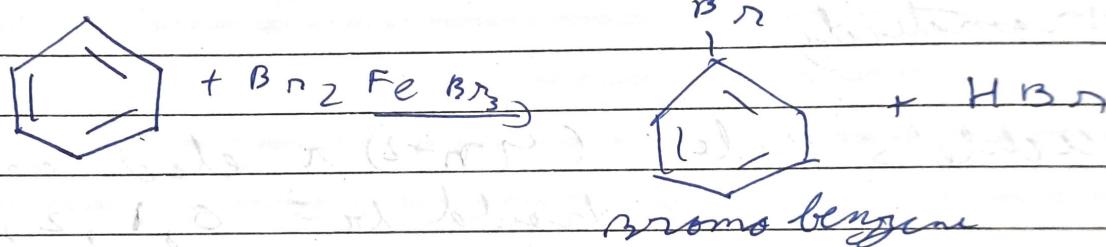
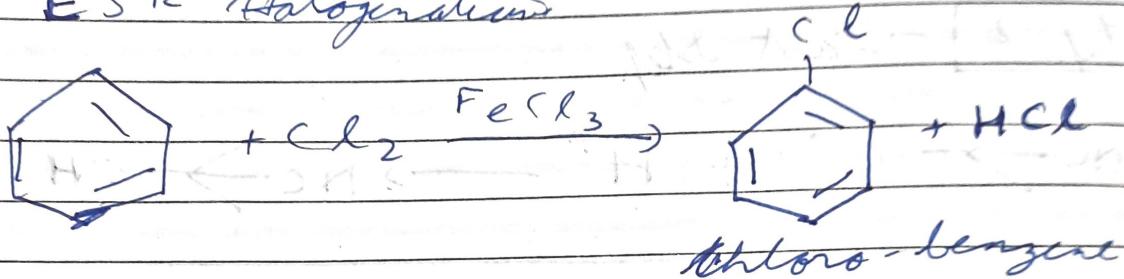
- ① molecule should be planar  
(resonance)
- ③ conjugation should be present



## Types of ESR

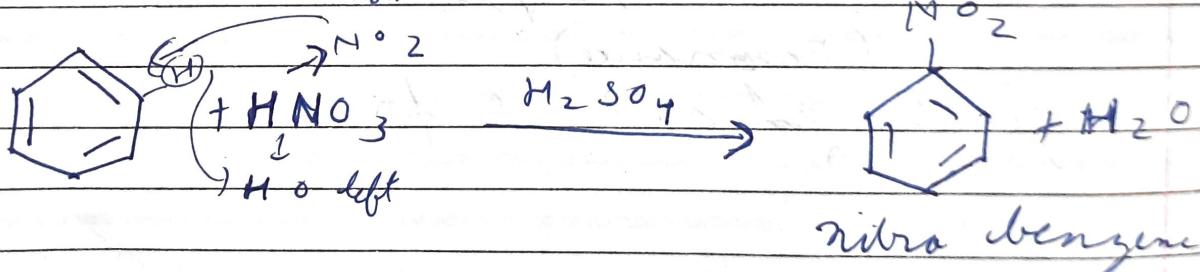
1)

### ESR Halogenation



②

### E.S.R. nitration



③

### E.S.R. sulphonation

