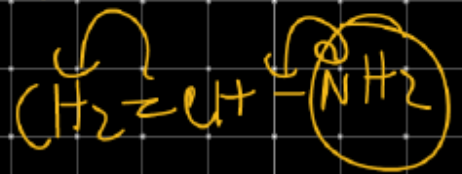
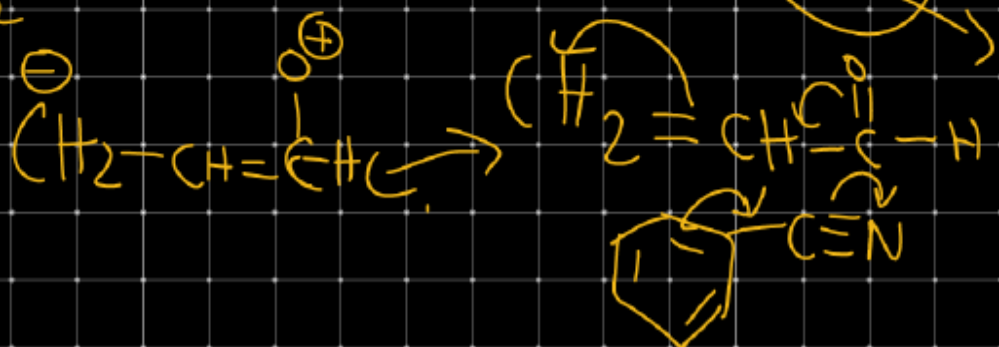


# Mesomeric Effect



If group withdraw  $e^-$  by resonance then it is said to have  $-M$  effect

\* If group donate  $e^-$  through Resonance then it has  $+M$  effect

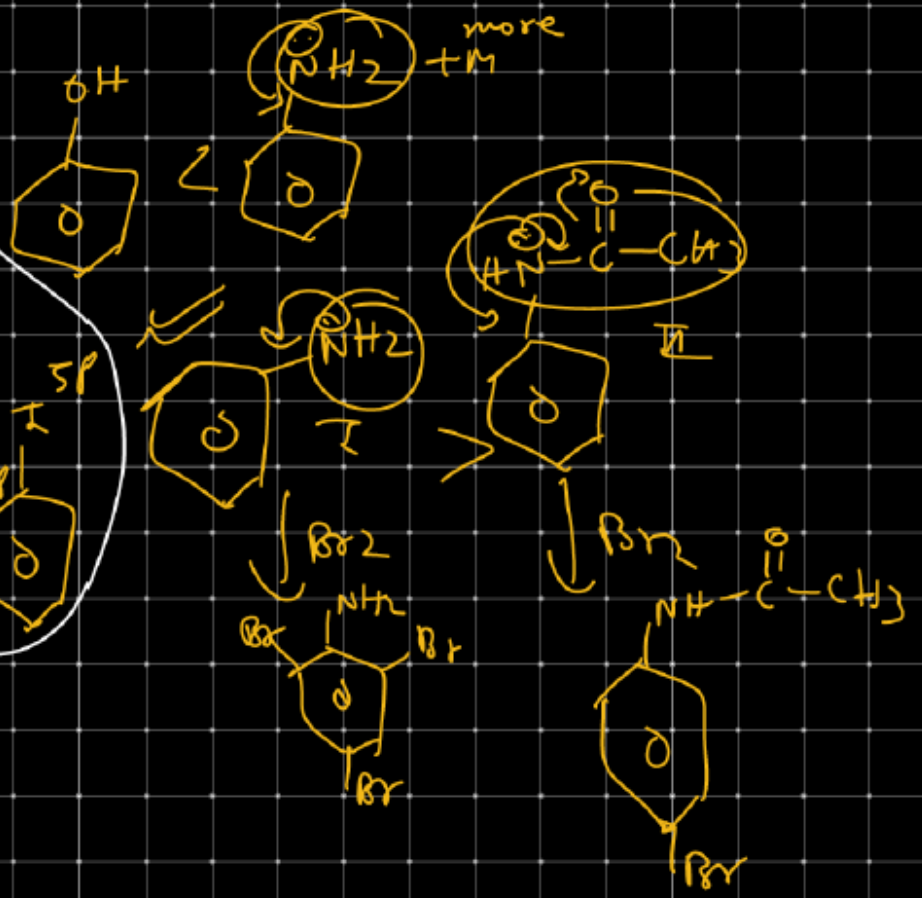


+M order

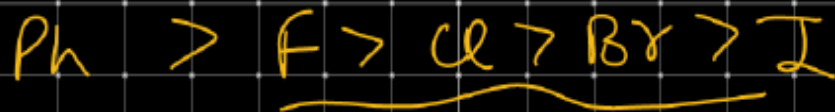
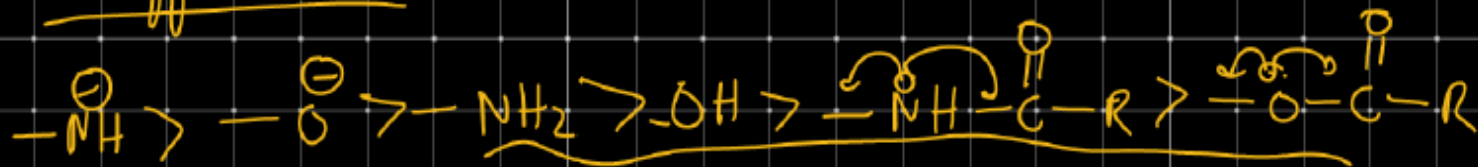


halogens are deactivating group

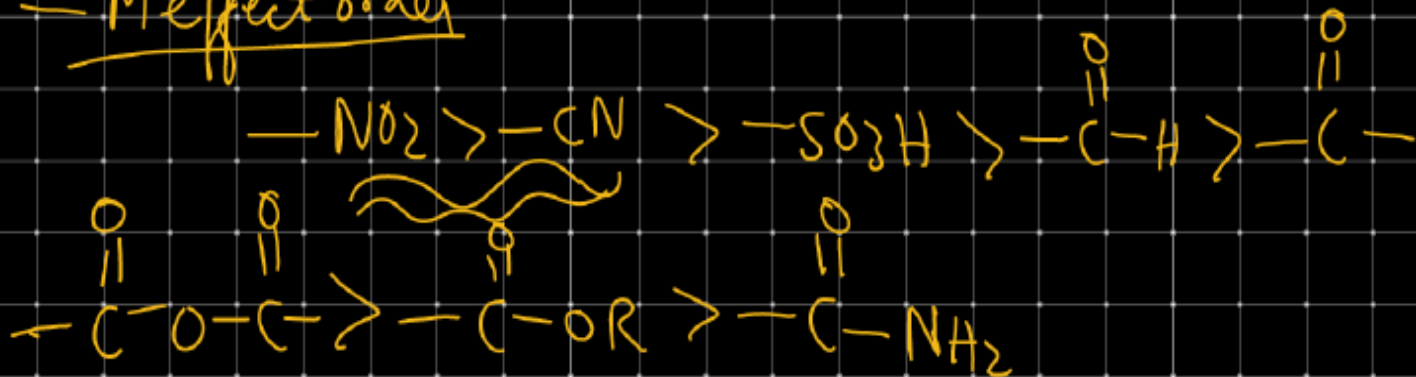
exception  $I > +M$

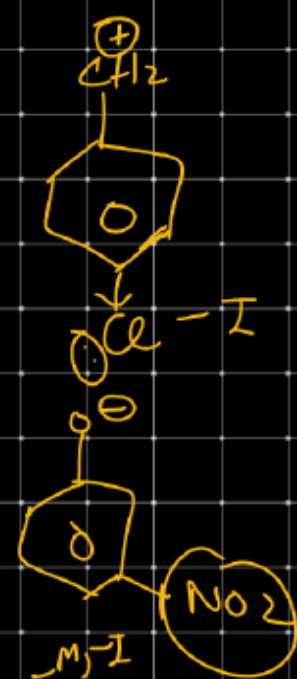


+M effect order



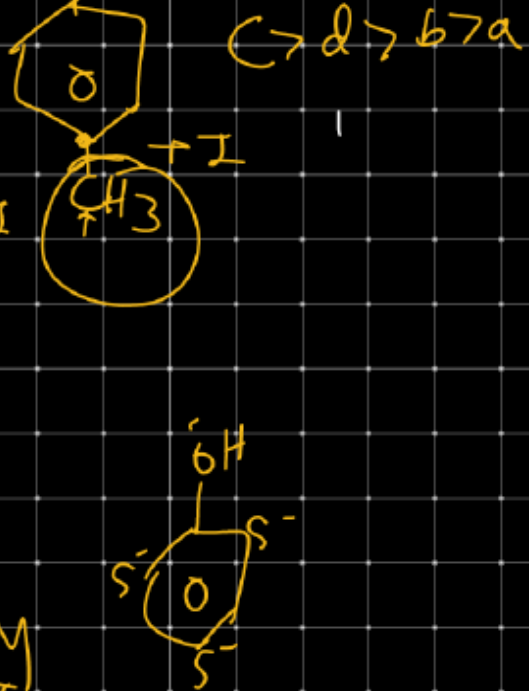
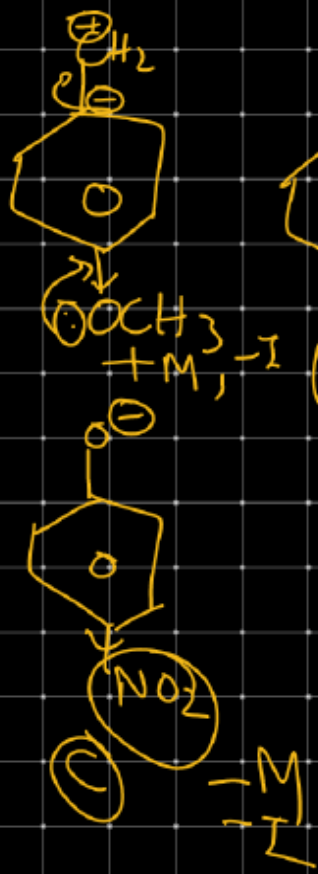
-M effect order

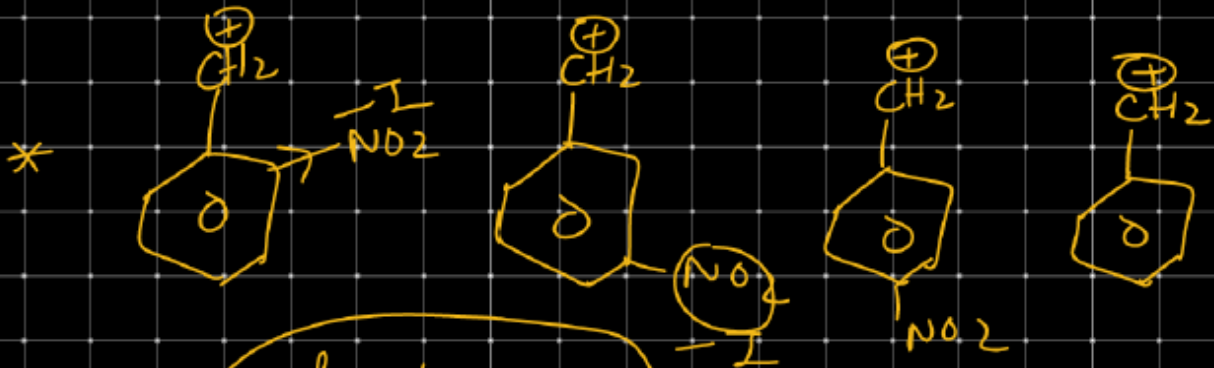




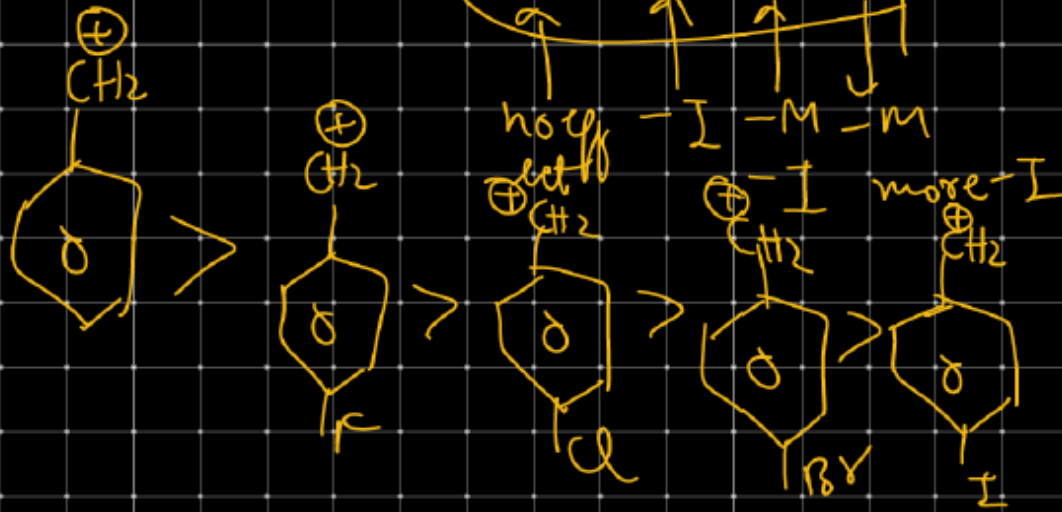
$a \gg c \gg b$

$-M$   
more  $-I$



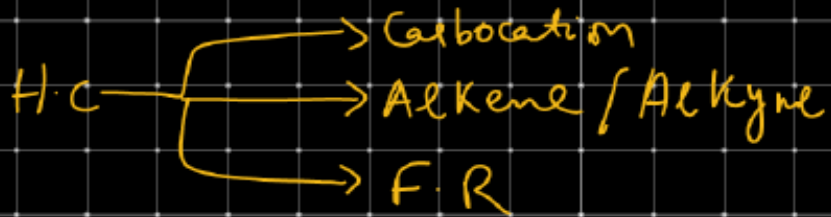


d > b > c > a



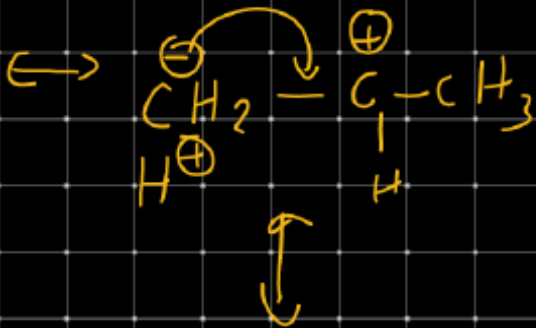
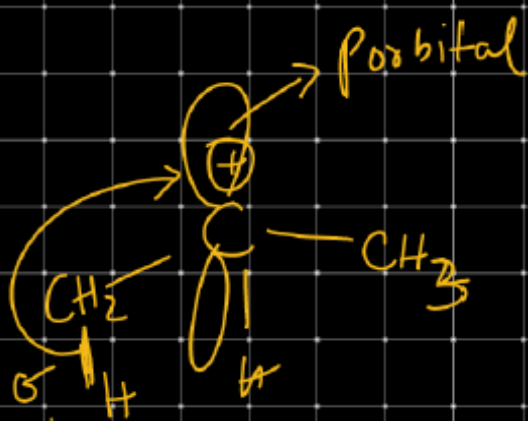
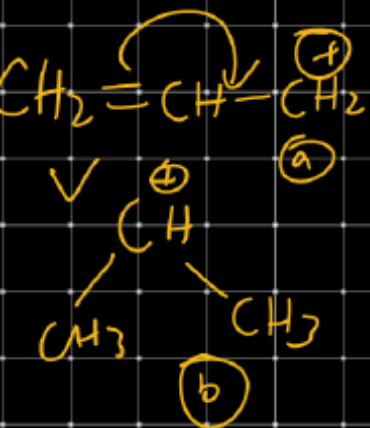
# Hyperconjugation

\* Also known as no bond resonance /  $\sigma$ -p conjugation



- |   |                                         |                        |               |
|---|-----------------------------------------|------------------------|---------------|
|   | $\overset{+}{C} / \overset{\ominus}{C}$ | $\overset{\ominus}{C}$ | Alkene/Alkyne |
| ① | Reso.                                   | Reso.                  | Reso          |
| ② | H.C.                                    | Induct                 | H.C.          |
| ③ | Inductive                               |                        |               |





Stability of Carbocation  
 $\propto$  No of  $\alpha$  Hydrogen

