

Extended Conjugation

⇒ Compound must have at least "3" segments

⇒ Flow of π electrons in same direction

Ex:



Cross Conjugation

⇒ Compound must have at least "3" segments

⇒ Flow of π electrons in opp. direction

Ex:



Note: Extended conjugation is more stable than cross conjugated system

(1) Stability order:



(Cross Conjugated)

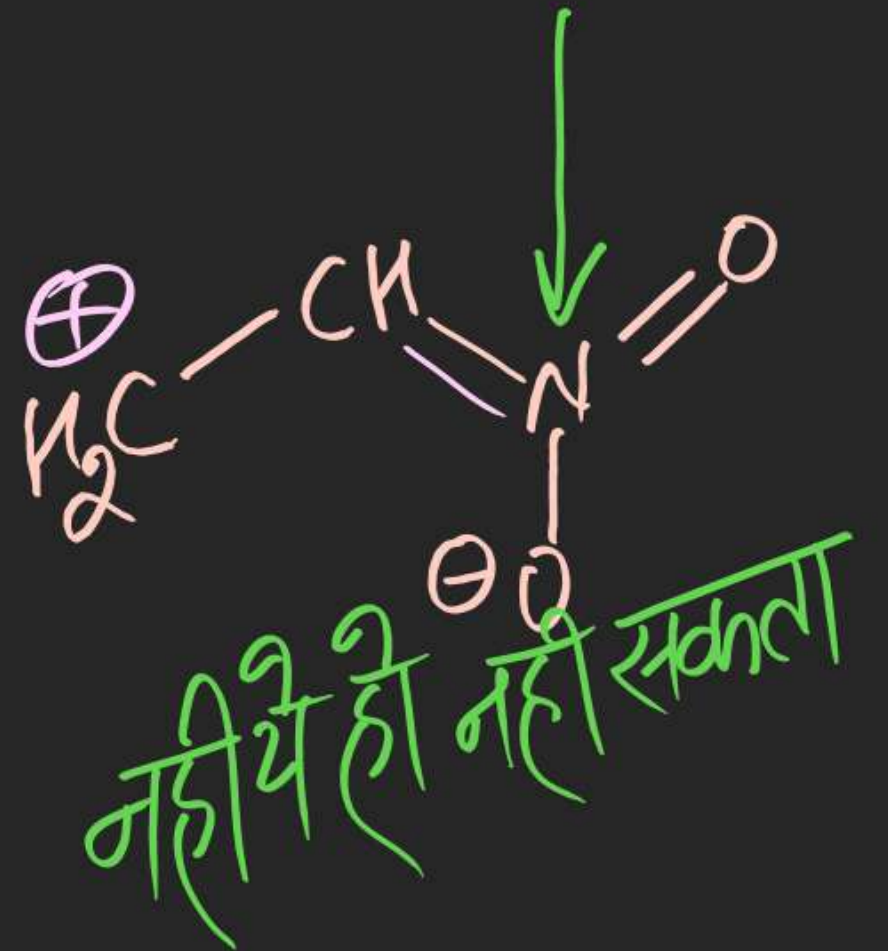
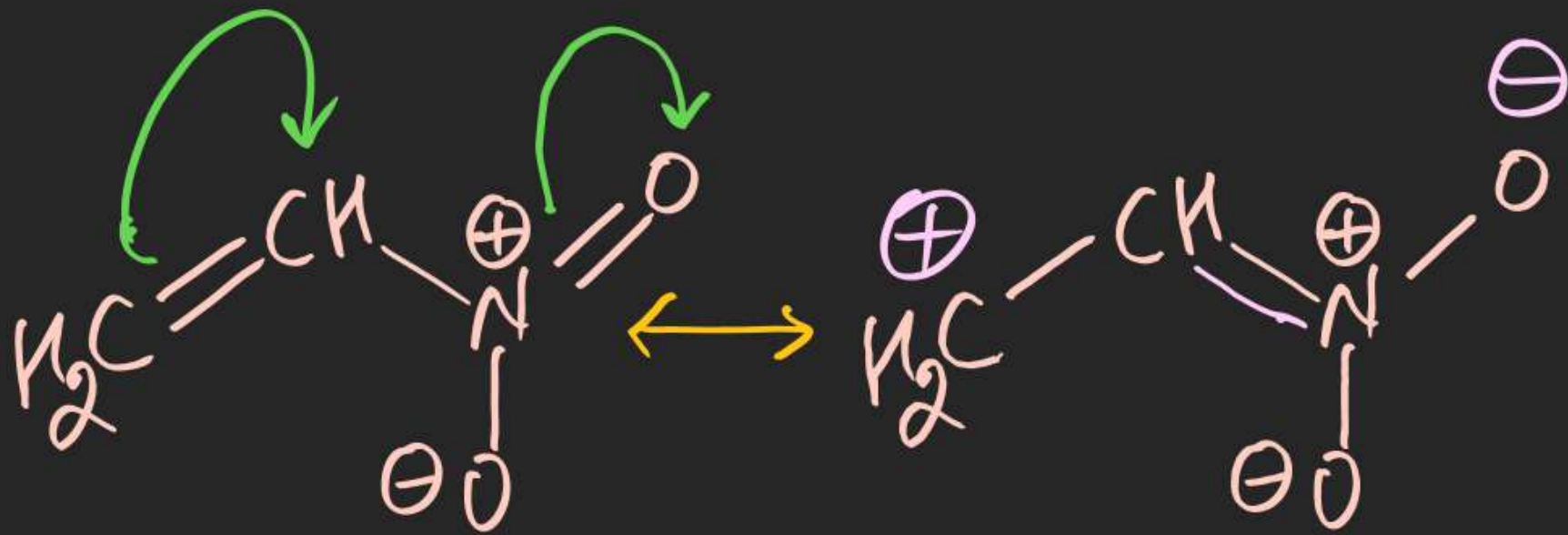
(Extended Conjugation)

(#) Rules for Drawing R.S.!

Rule-1: Each RS must have valid str. (don't violate octet Rule)

Ex-1!

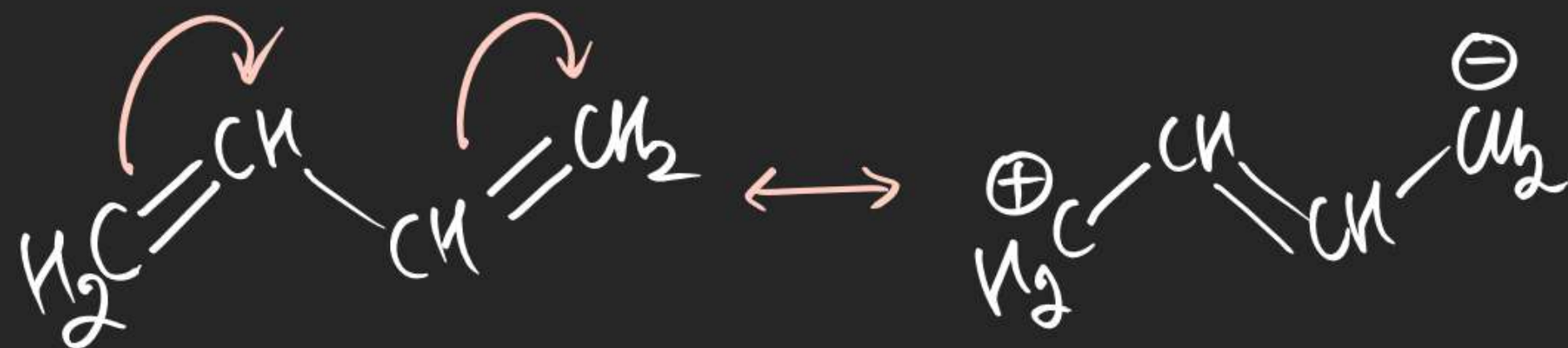
NitroEthene



Rule-2! Each RS must have same no. of unpaired e^- .

EX-2!

Buta-1,3-Diene



(up $e^- = 0$)

(I)

(up $e^- = 0$)

(II)

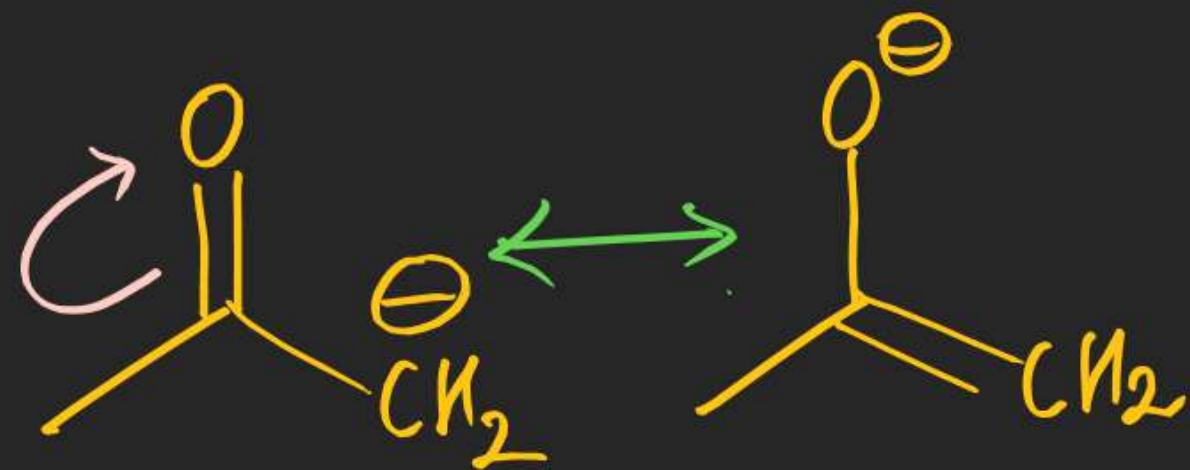


(up $e^- = 2$)

तो ये RS
I & II ant

Rule-3:- Nuclei of Each atom in R-S must be same.

Ex-3:-

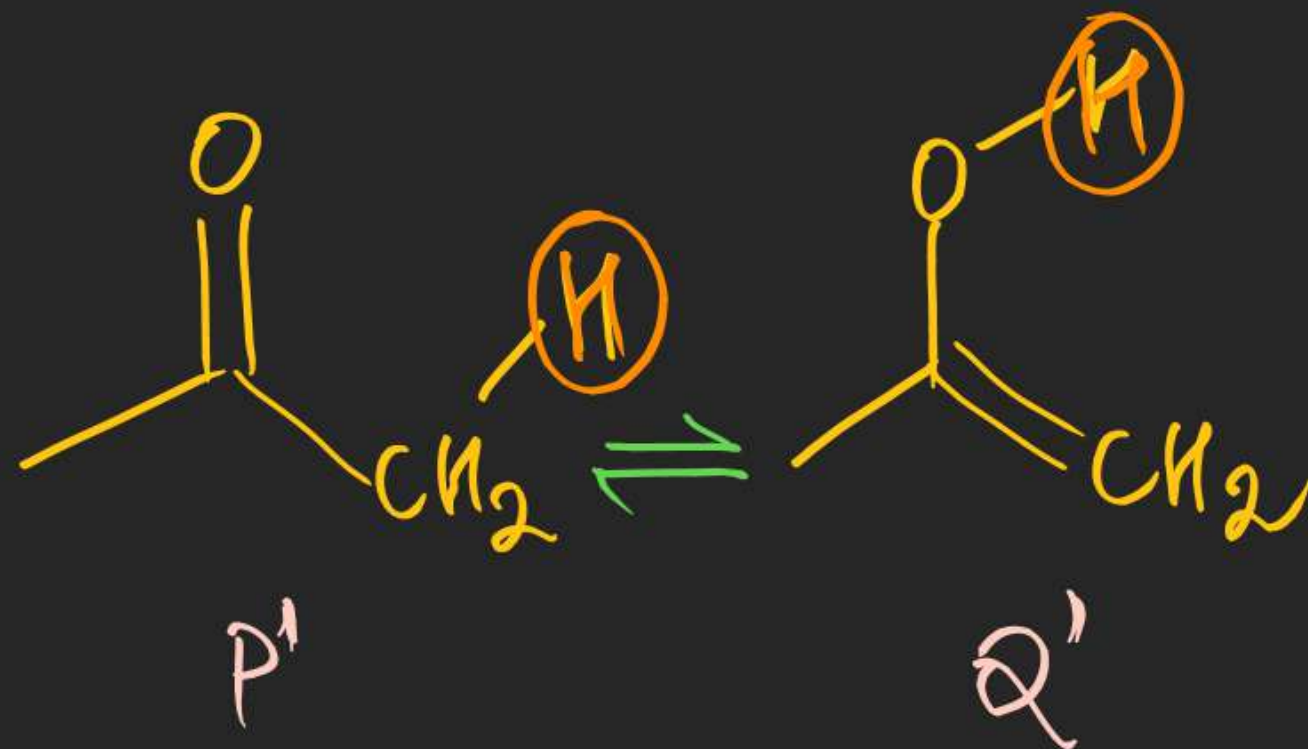


P

Q

Resonating structures

Ex-4:-



P'

Q'

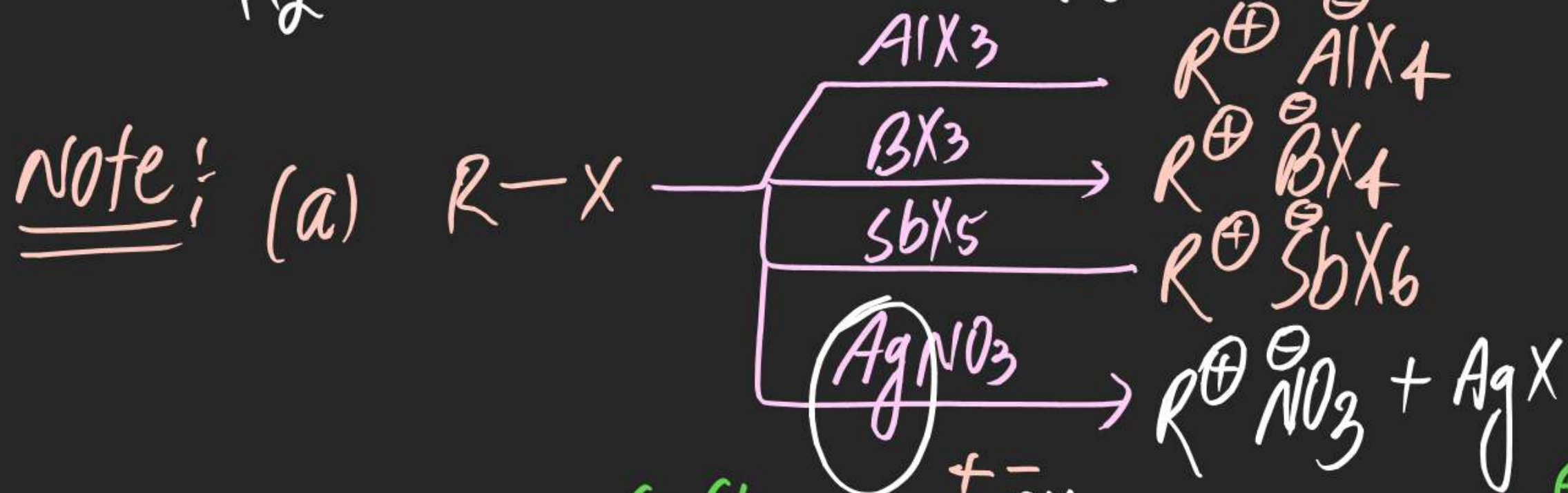
Not Resonating structures
(Tautomers)

Rule-4: RS having opp. chgs on adjacent atoms (which can form Bond) is usually neglected.

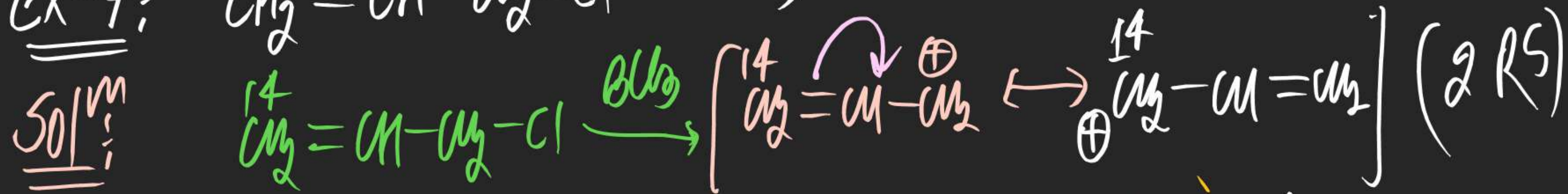
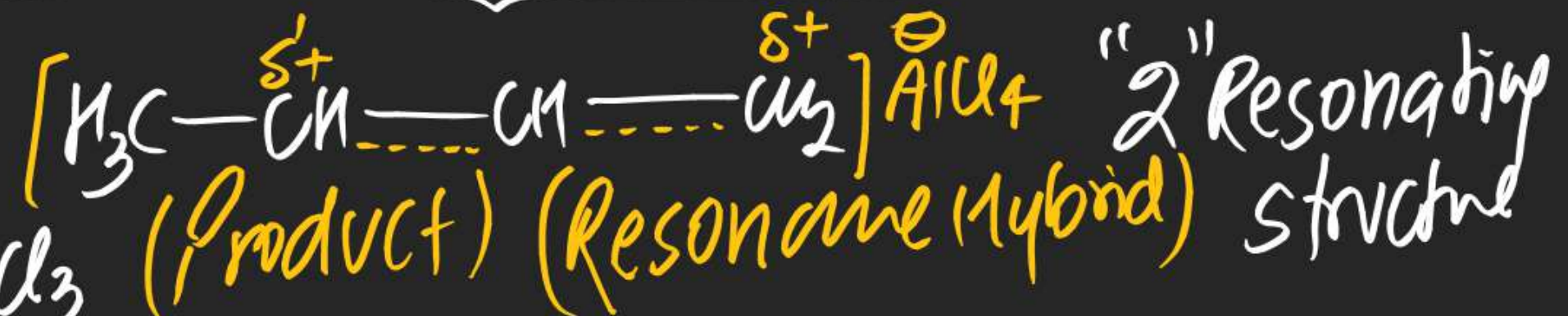
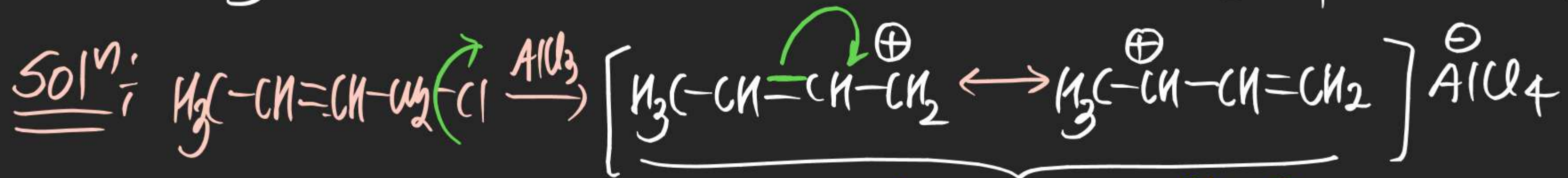
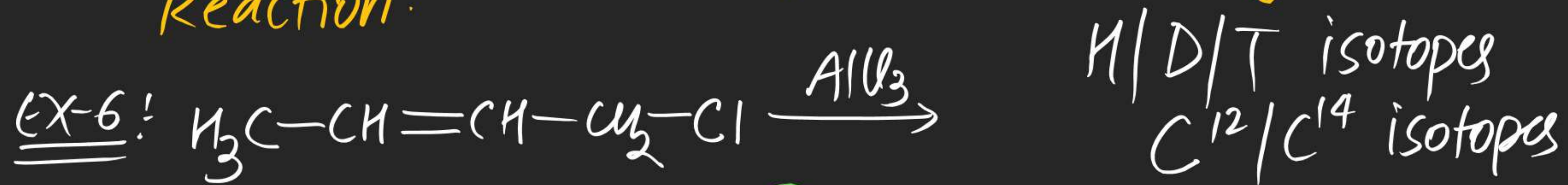
Ex-5:

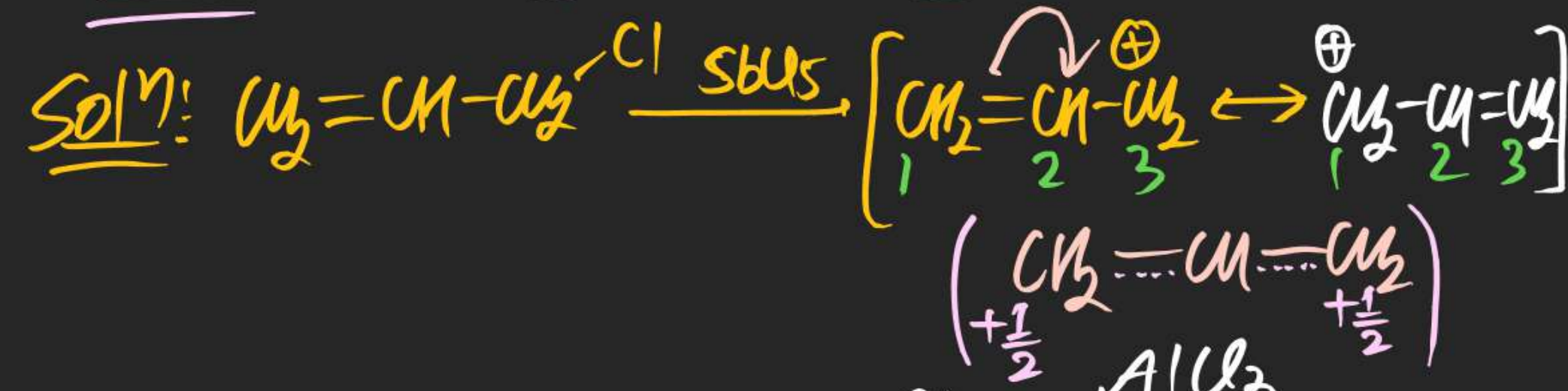


Note:



(#) Calculate total no. of RS of Product of following Reaction.





Ex-9!



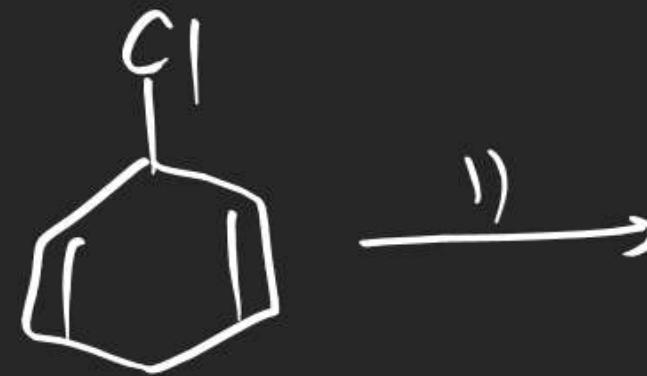
Ex-10!



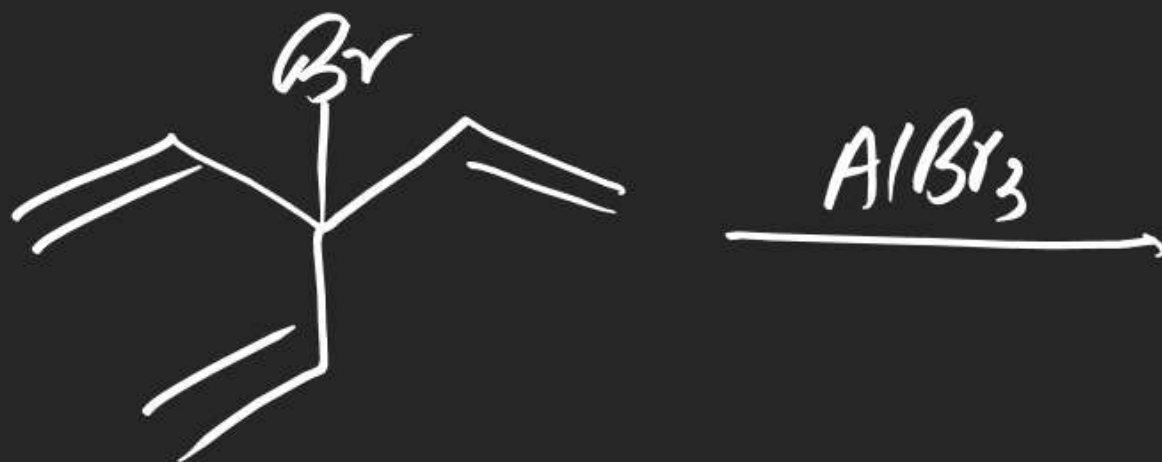
Ex-11!



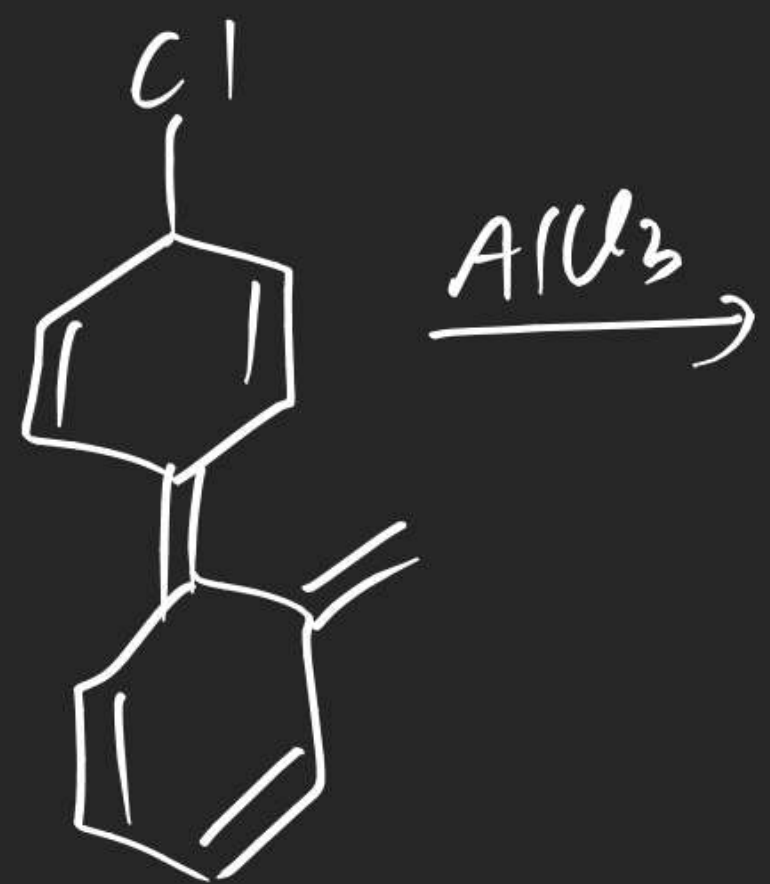
Ex-12



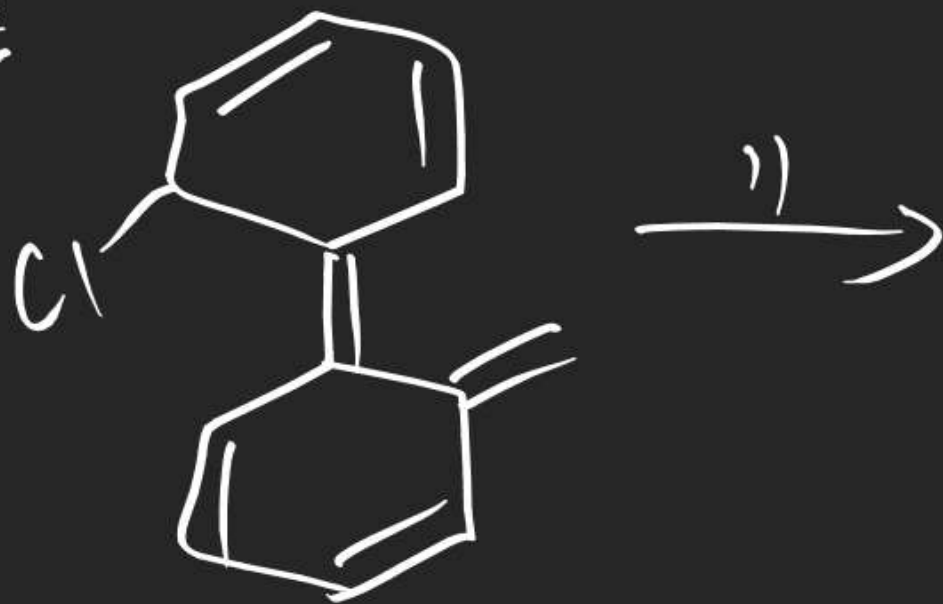
EX-13!



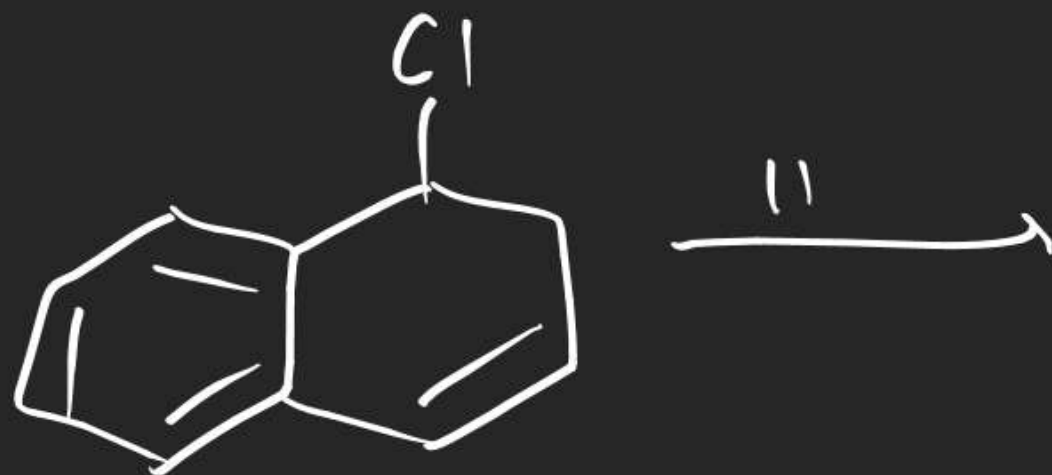
EX-14!



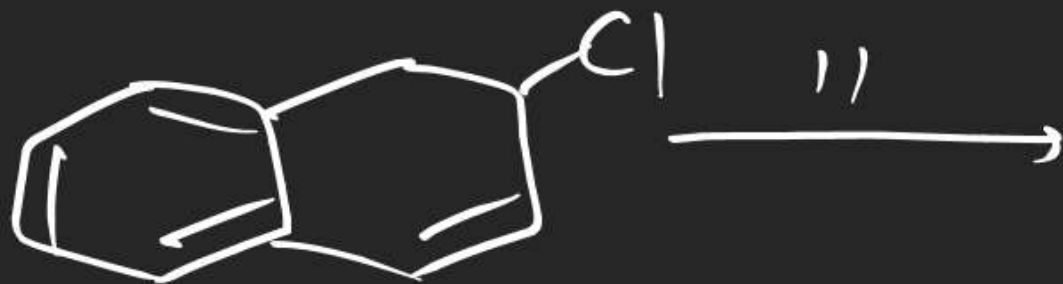
Qx-5!



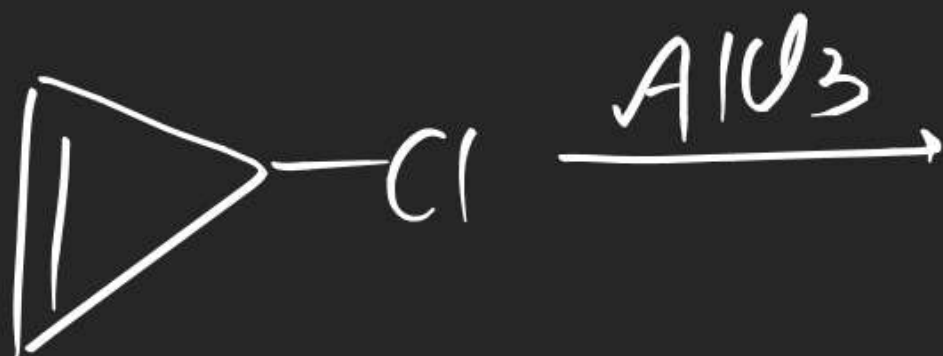
Qx-16



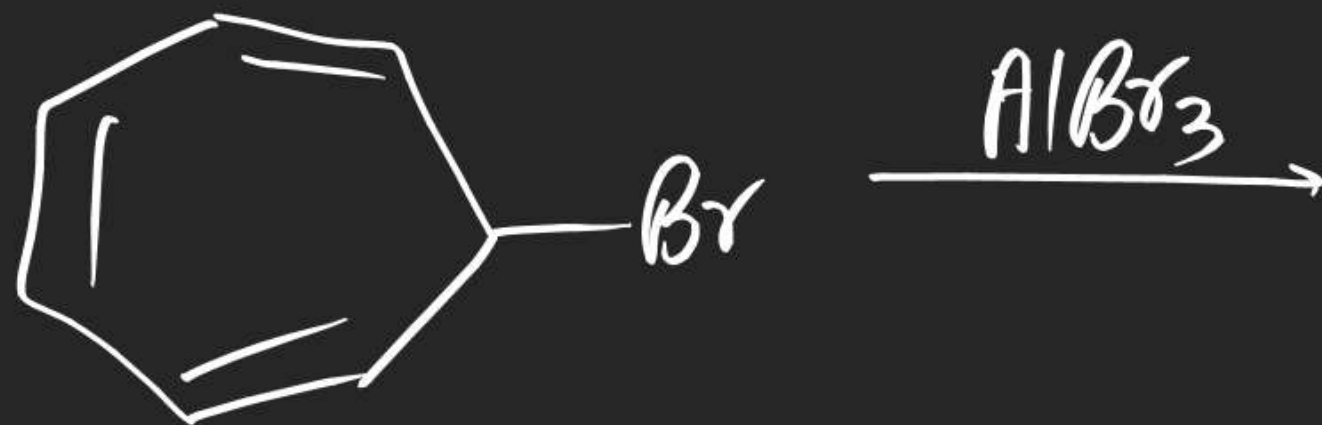
Q-17



Q-18:



Ex-19



Ex-20:

