



Doubt Clearing Session

Course on General Organic Chemistry (GOC) for Dropper 13th students



EXAM DAY

Monthly Batch Tests | 25th of Every Month

Next TEST on 25th September

🕒 **5:30PM to 7:00PM**

Don't forget to give your Exam. Let's Crack It !



Exam Day

Monthly Batch Tests



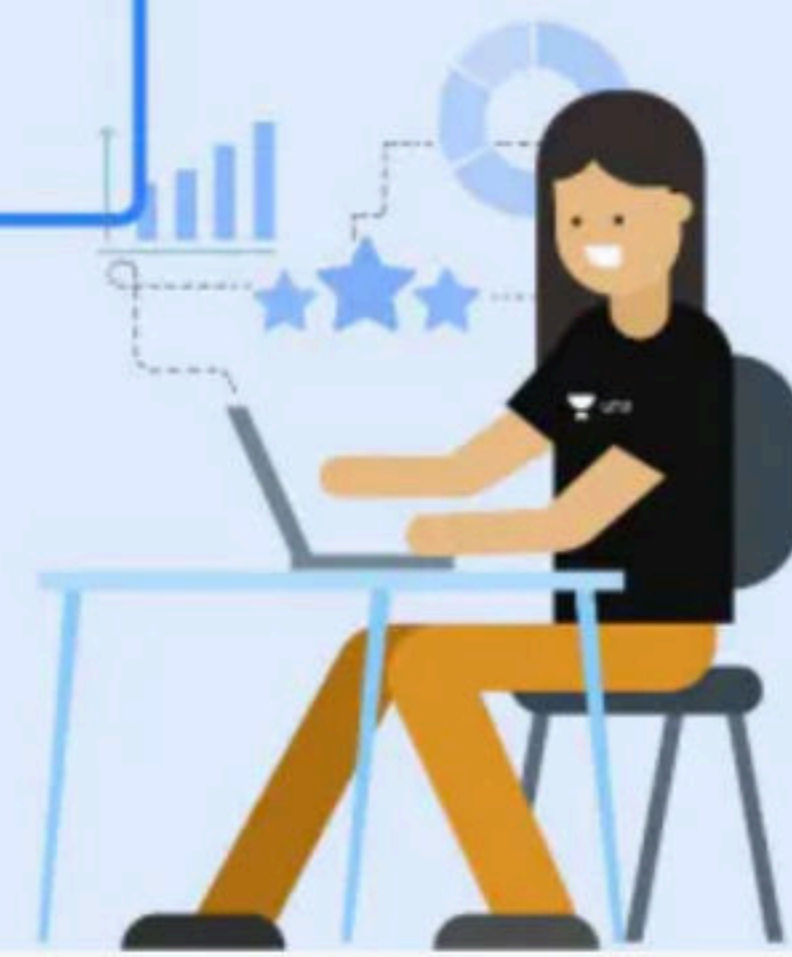
25th of Every Month

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Don't Forget to give your Exam.

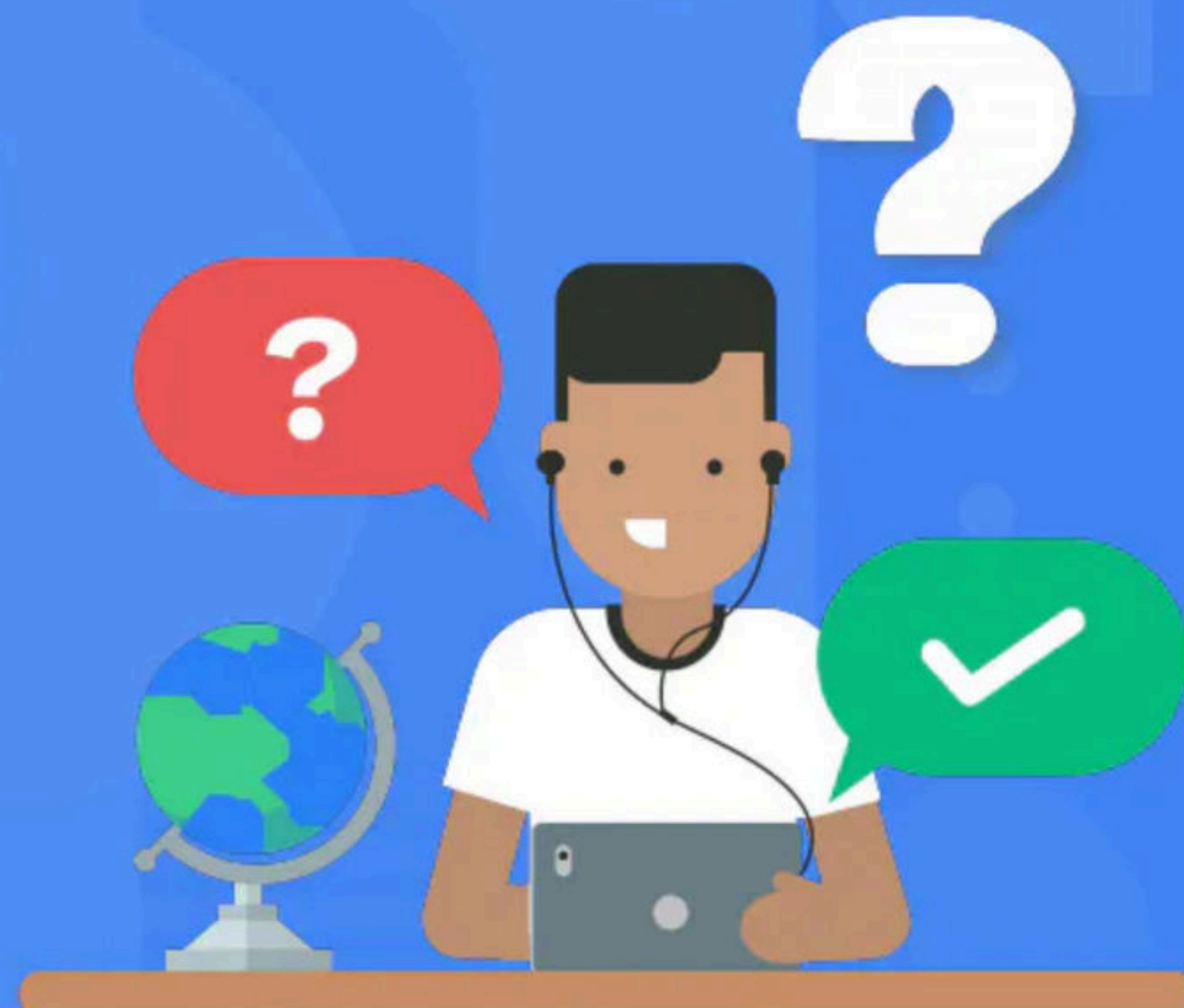
Let's Crack It!





Unacademy

Ask a Doubt





Unacademy Ask a Doubt

✓ Ask Unlimited
Doubts

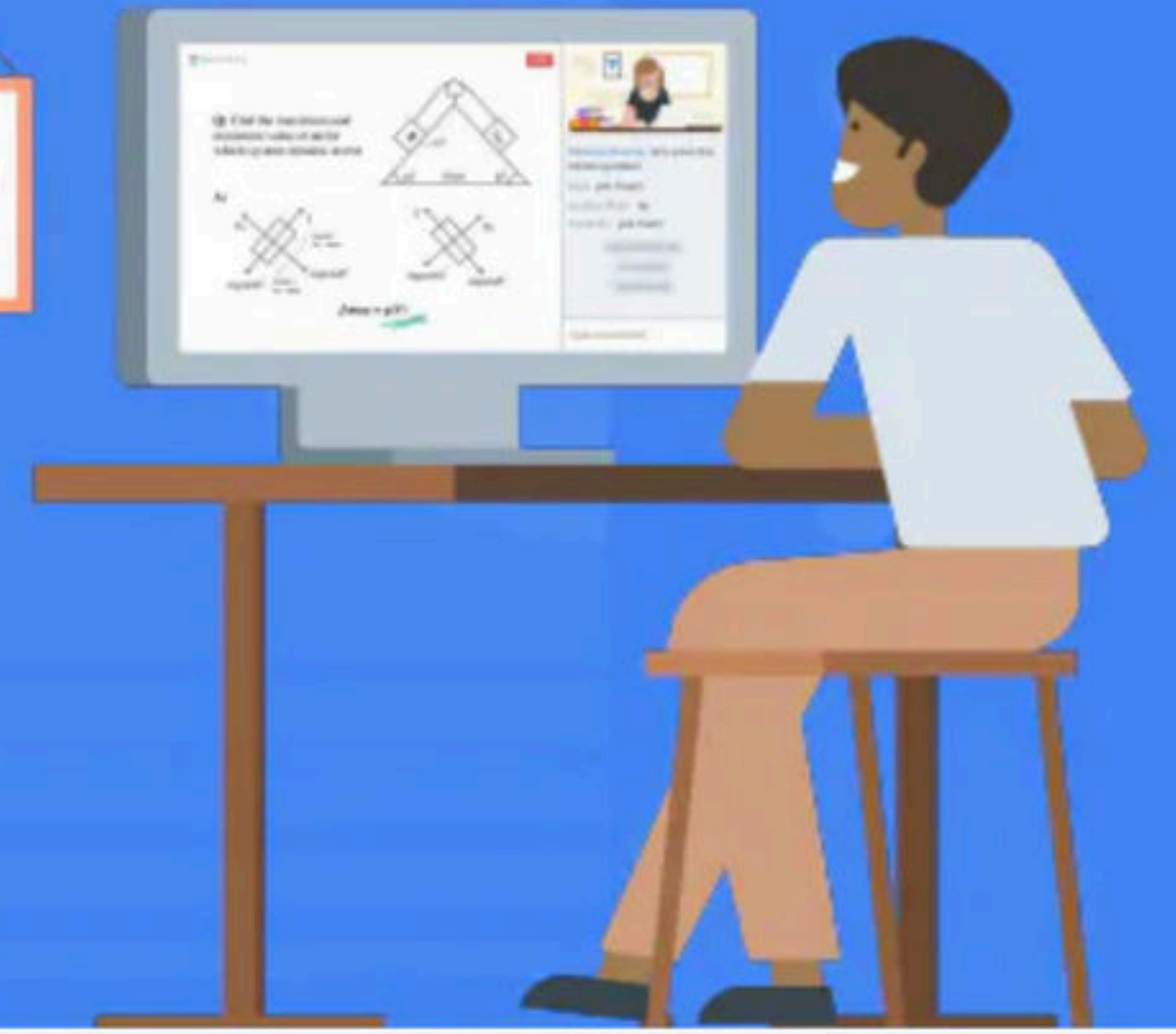
✓ Ask Doubts At
Any Time

✓ Get High-quality Video
Solutions In English
& Hindi

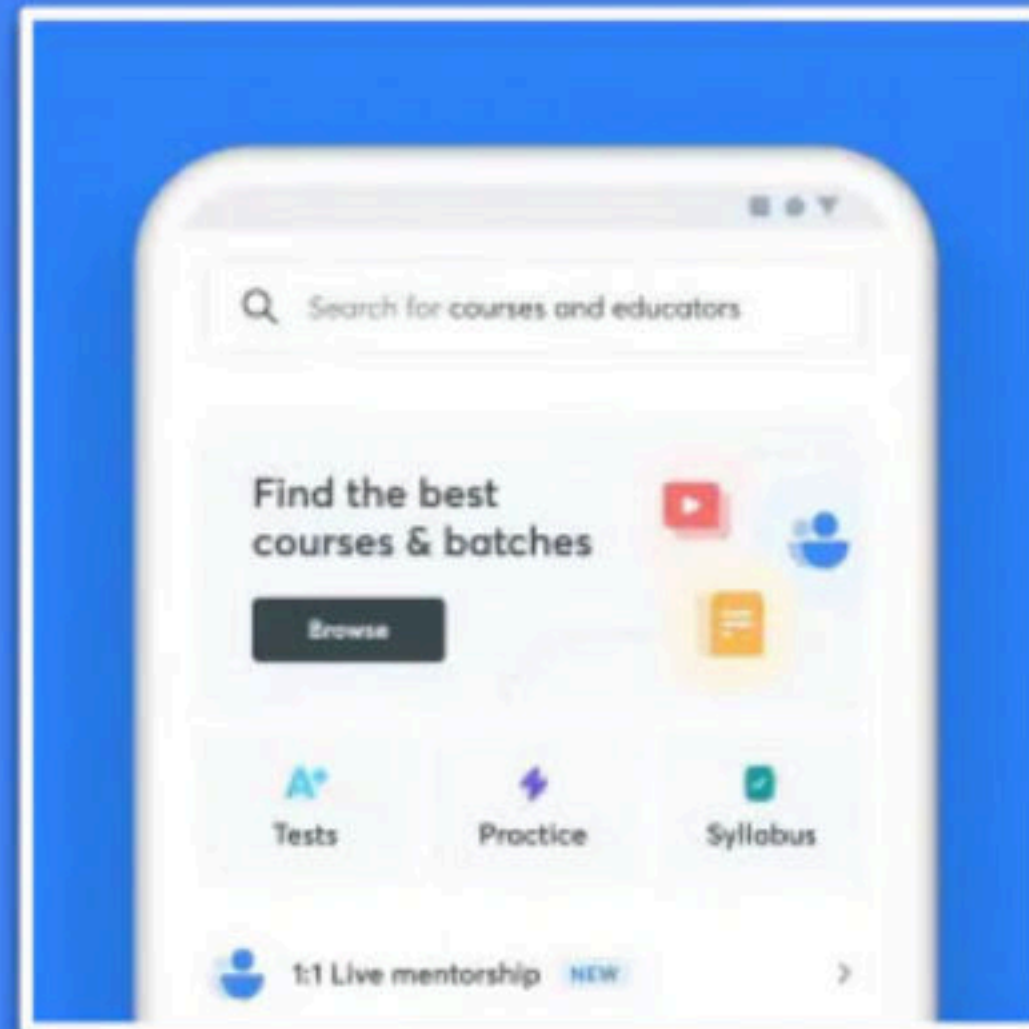
✓ Receive Exact Matches For
Questions

✓ Obtain Instant And
Accurate Solutions To
Lakhs Of Questions

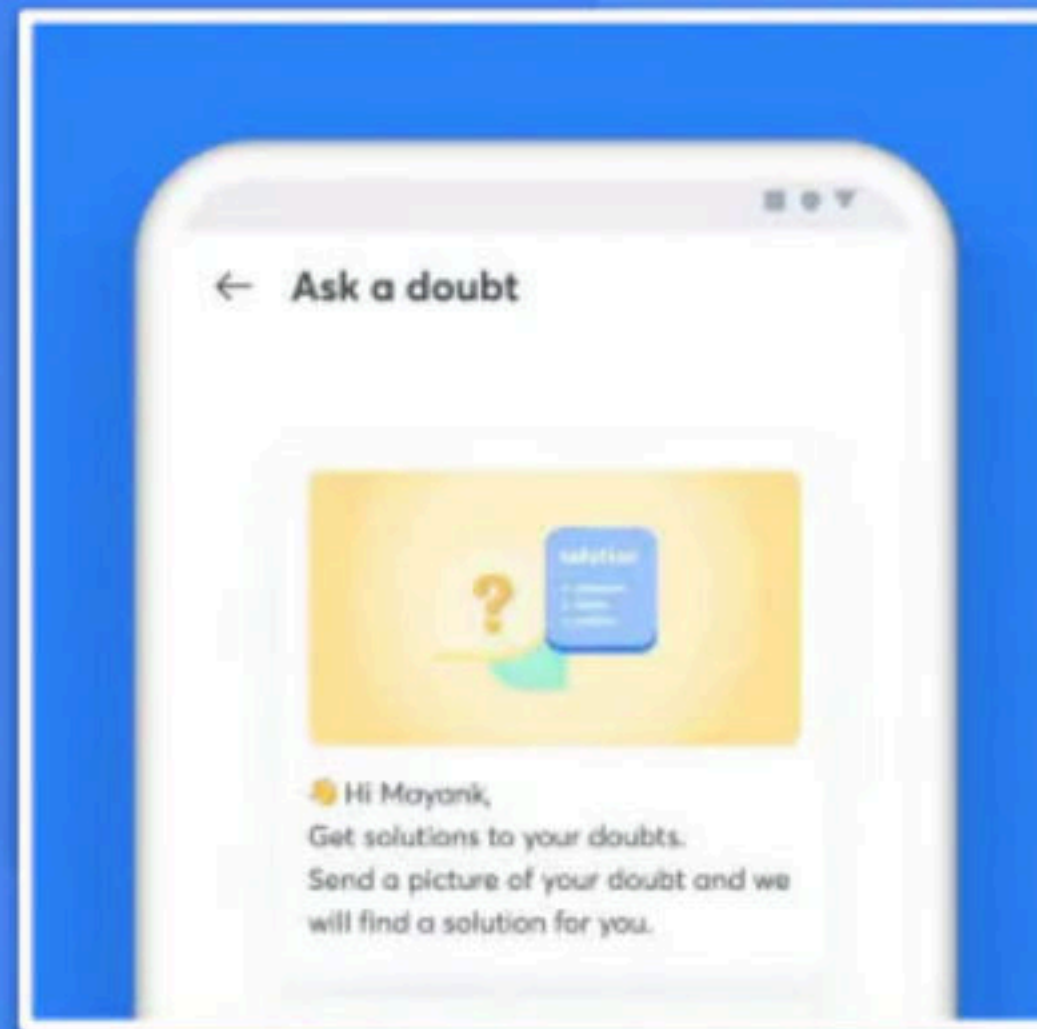
✓ Get Assistance With
Homework



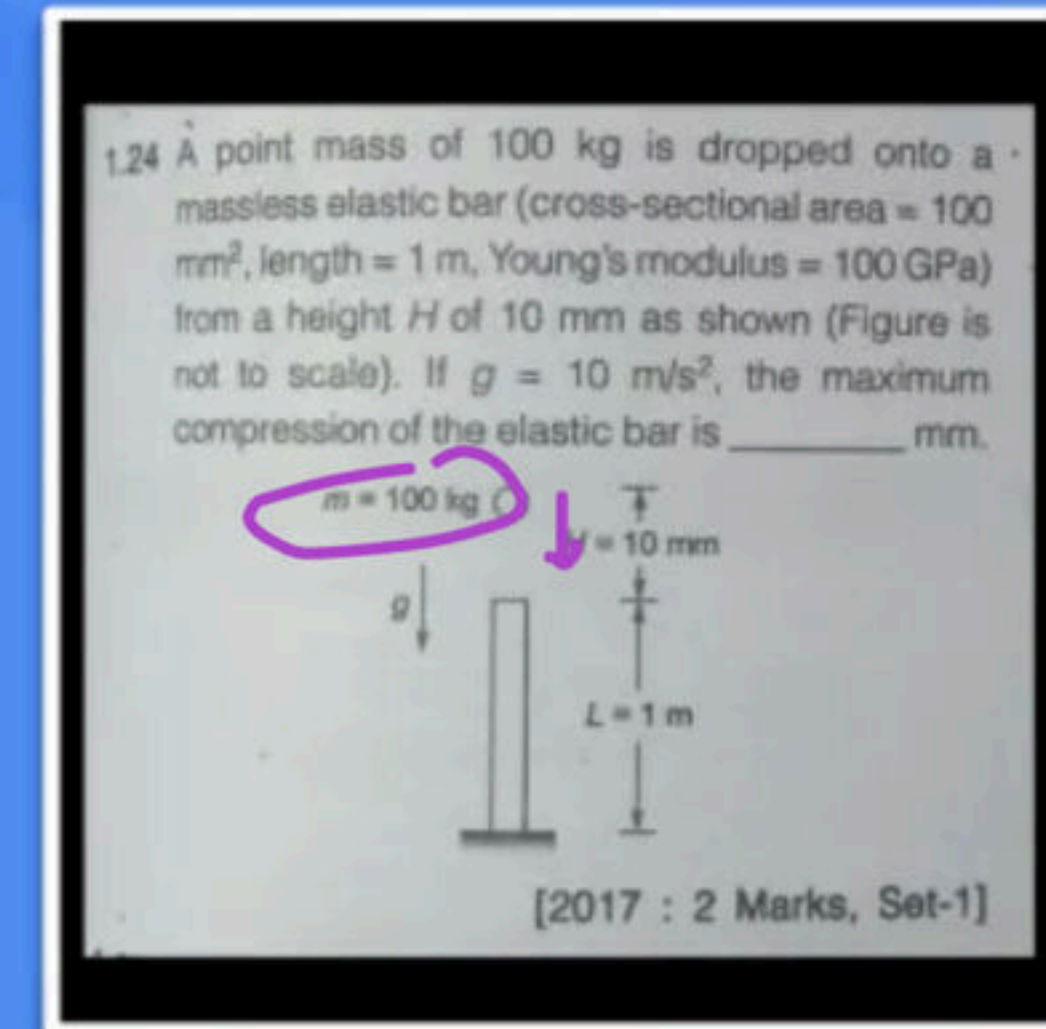
? How to Ask a Doubt



Step 1
Click on 'Doubts & solutions'

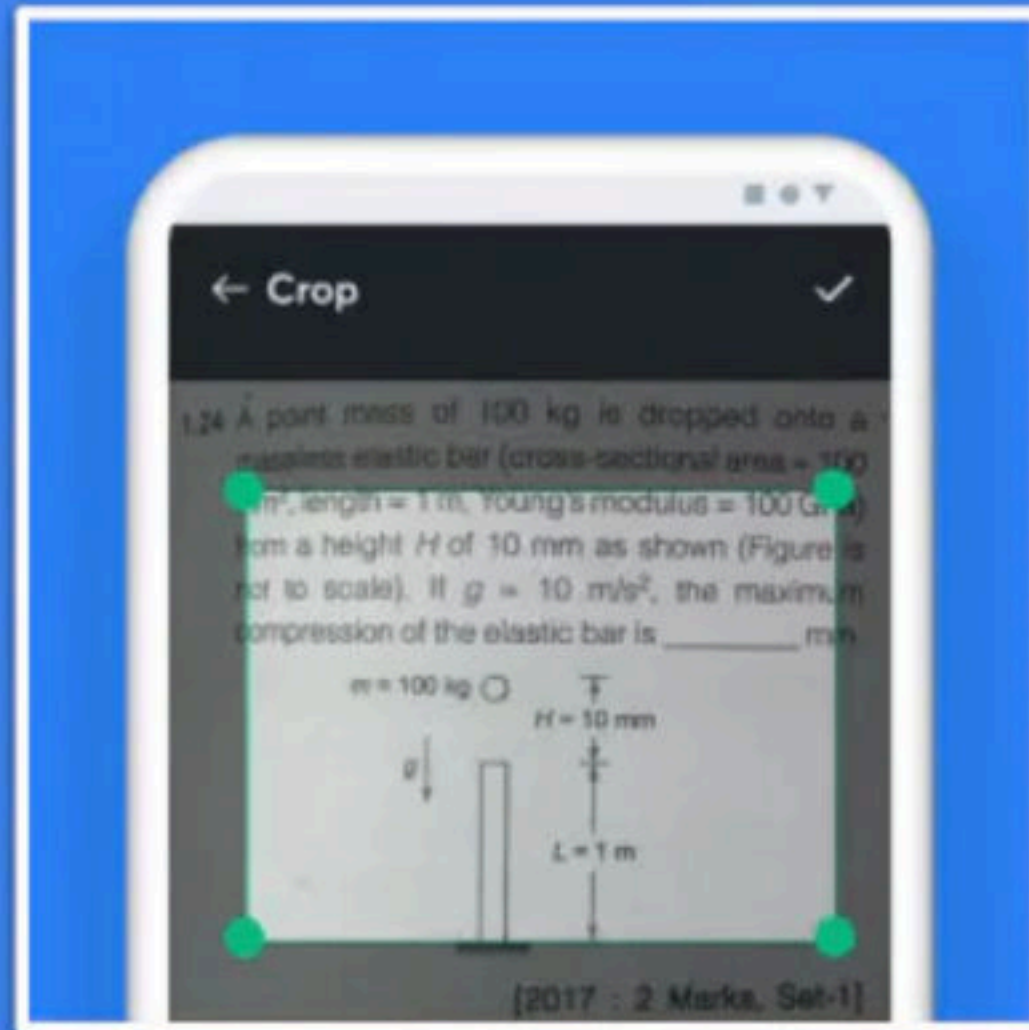


Step 2
Select 'Take a picture' or 'Choose from Gallery'

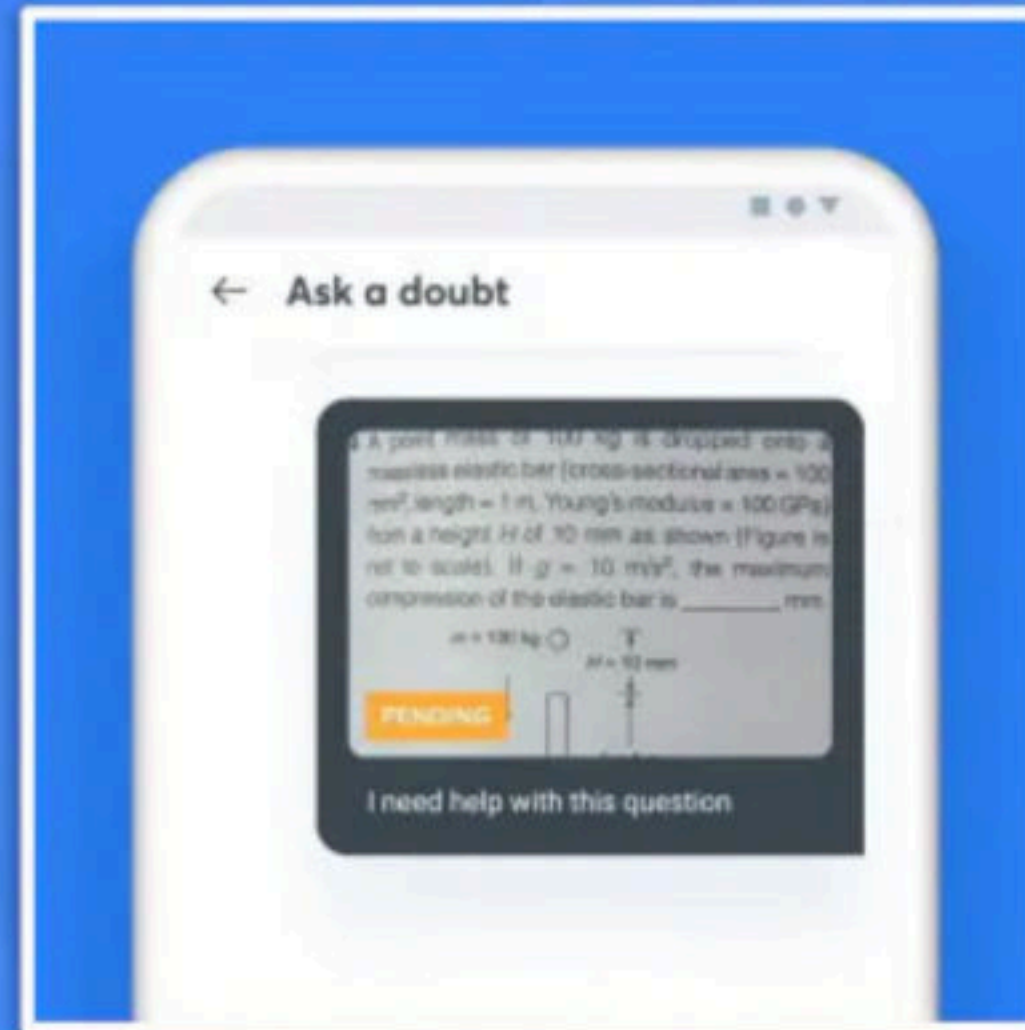


Step 3
Click/select a picture of your question

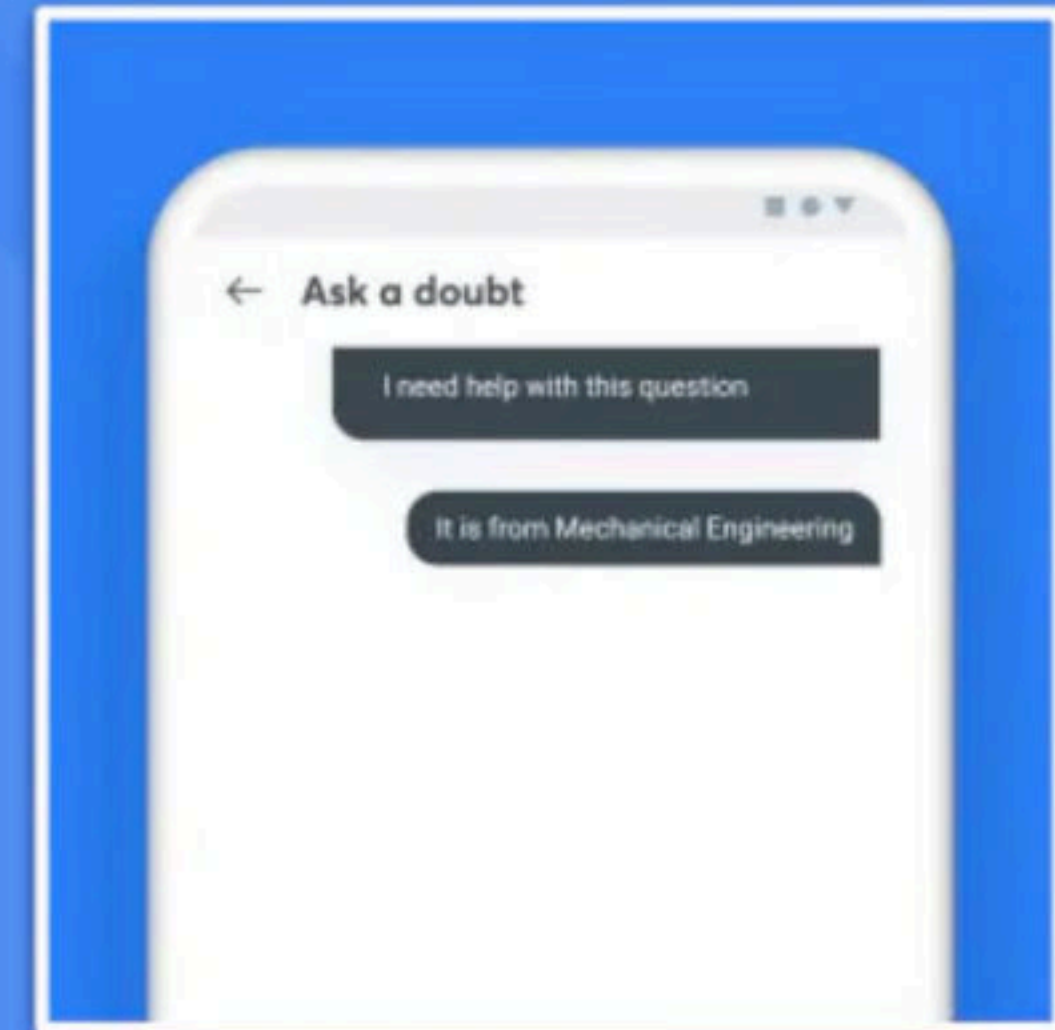
? How to Ask a Doubt



Step 4
Crop to highlight one specific question



Step 5
Choose the subject that the question falls under



Step 6
Sit tight, you'll receive the solution soon!

hw (discussion)

(10) $\text{II} = \text{IV} > \text{I} = \text{III}$

(11)



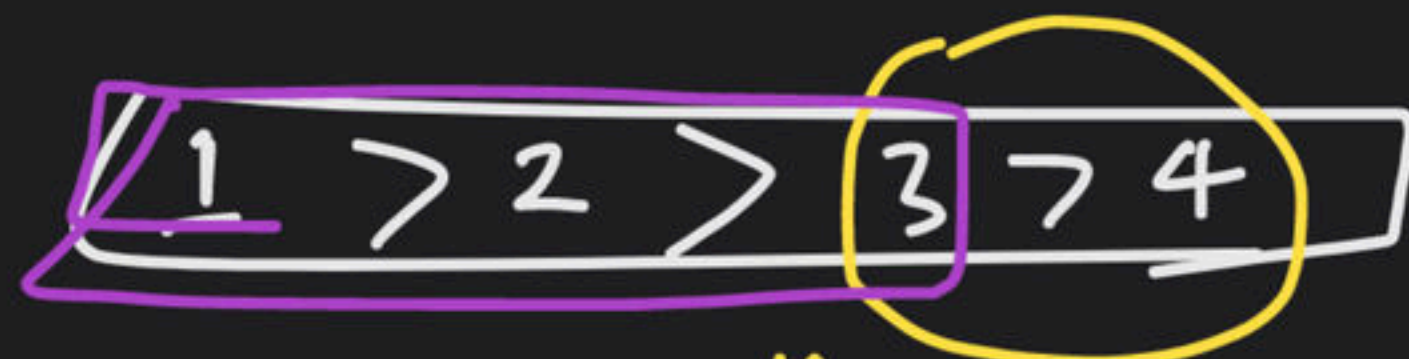
(12)

Octet
comp⁺ Octet
comp^L Irre
Irre.

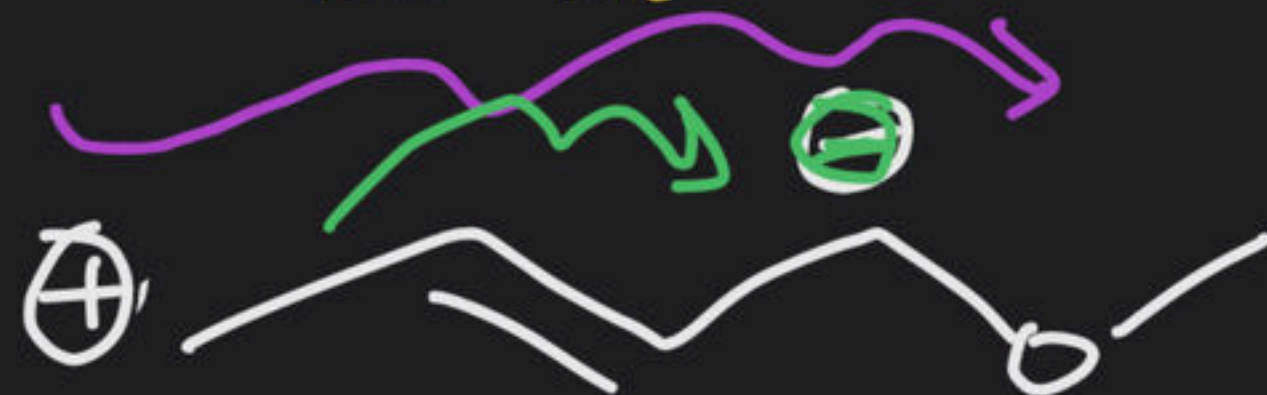
$271 > 473$

(13)

Conjugate Conjugate In In



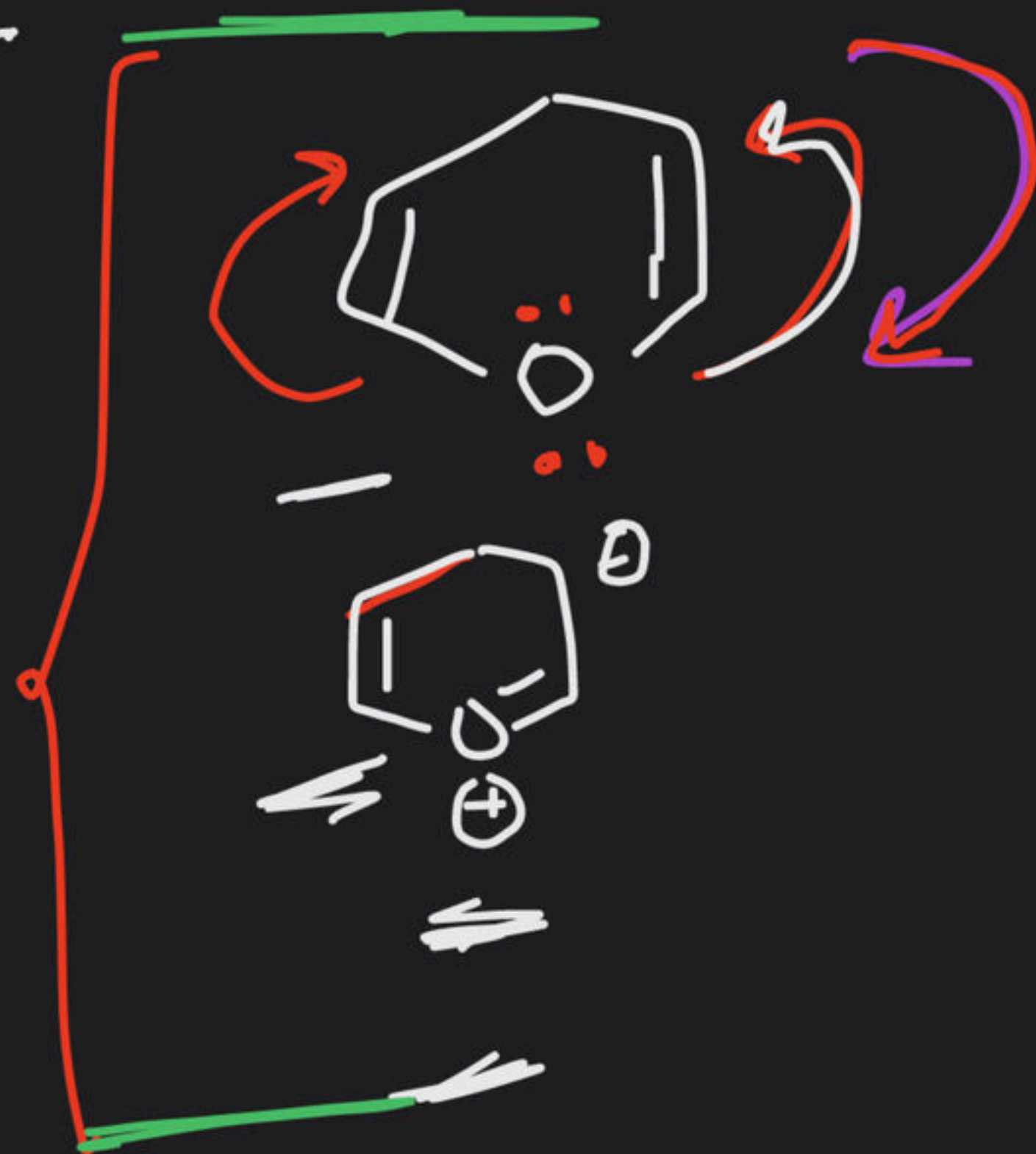
"least stable"



(15) $(-I \quad -I)$
 $1 > 2$

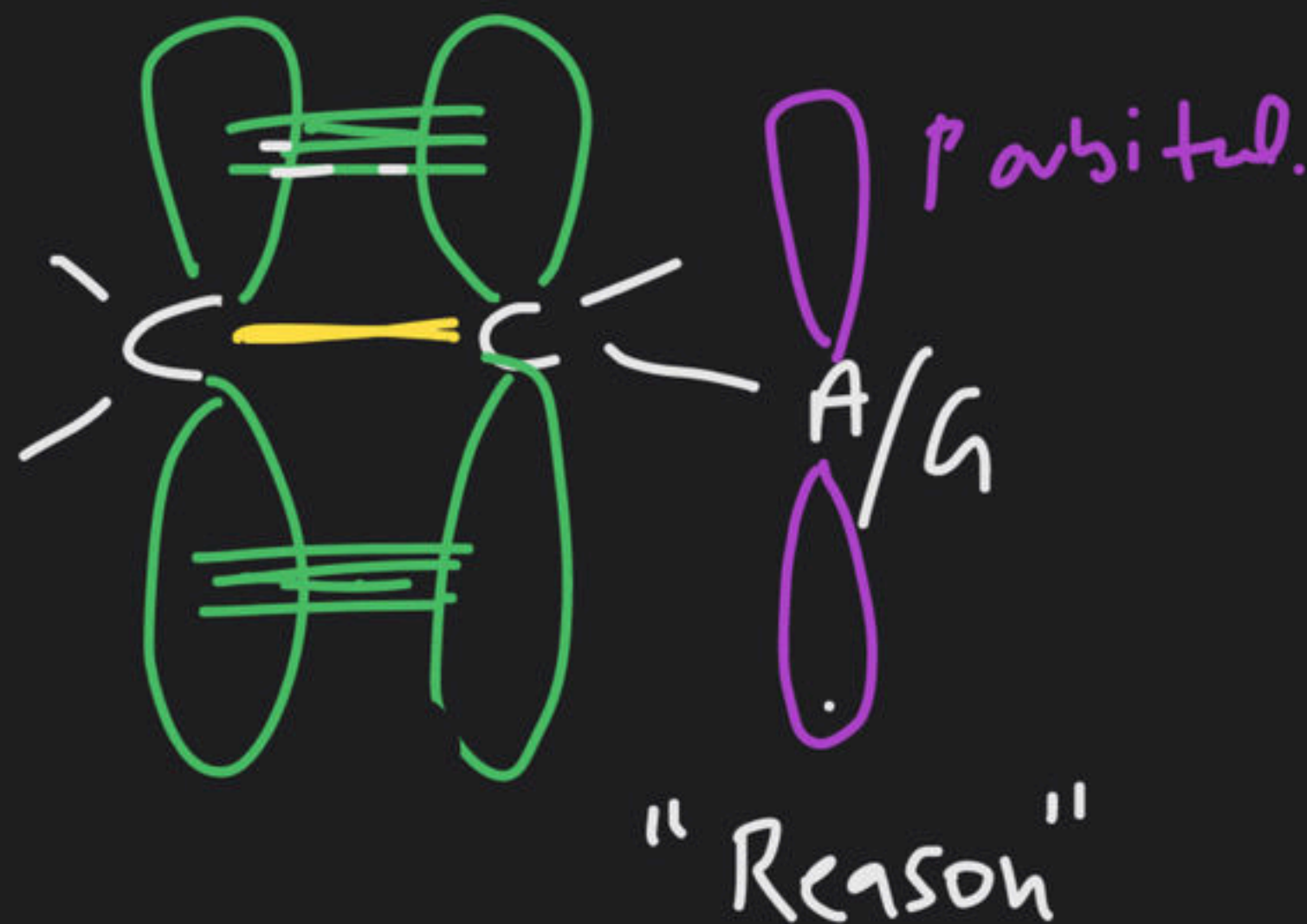
(16) $2 > 4$

least stable
2-5

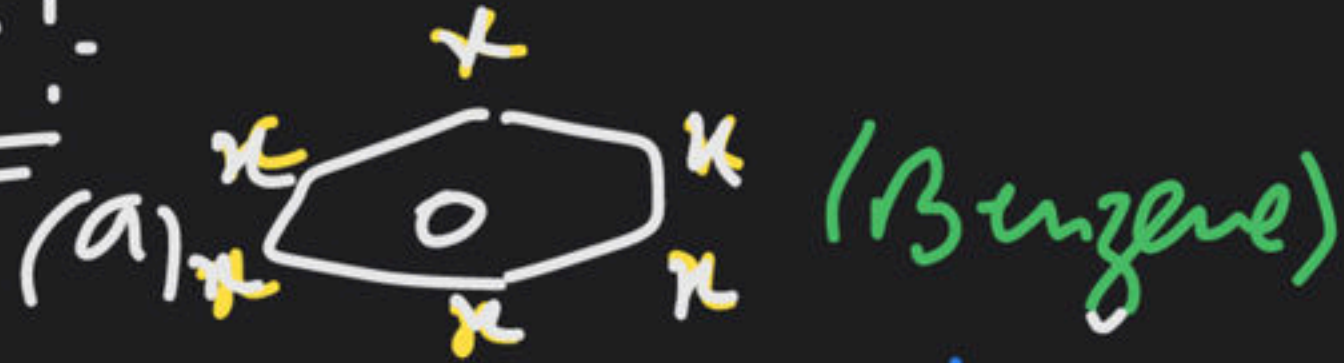


Resonance Effect

Displacement of π electrons of a system is due to ^{away} p orbital of directly attached atom/group is known as Resonance/mesomeric effect of that Atom/group.

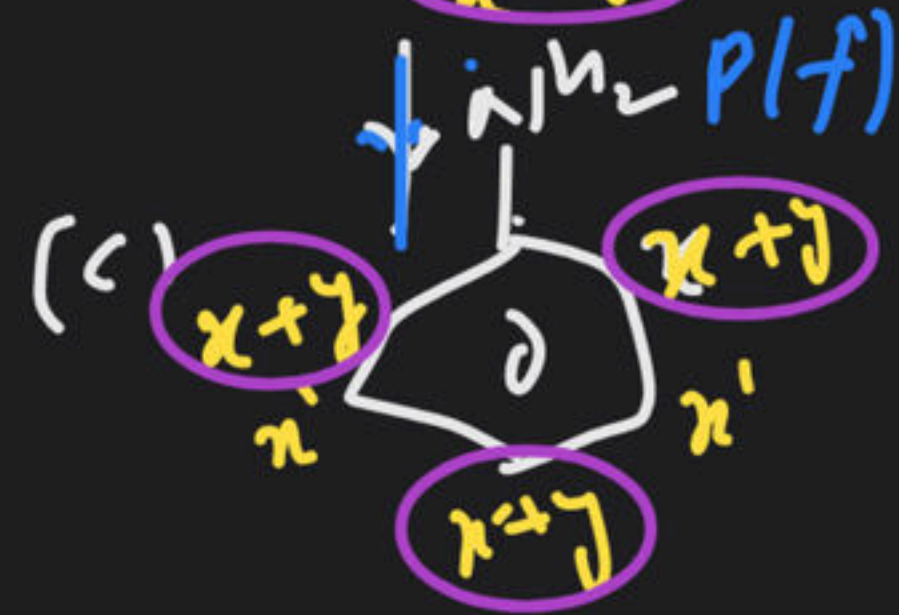
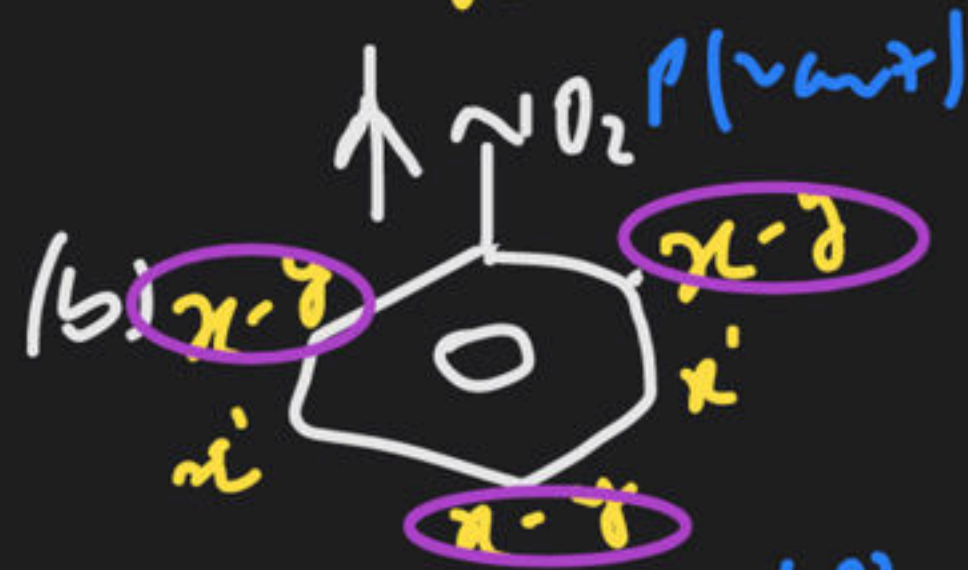


Ex:-



Resonance Phenomenon

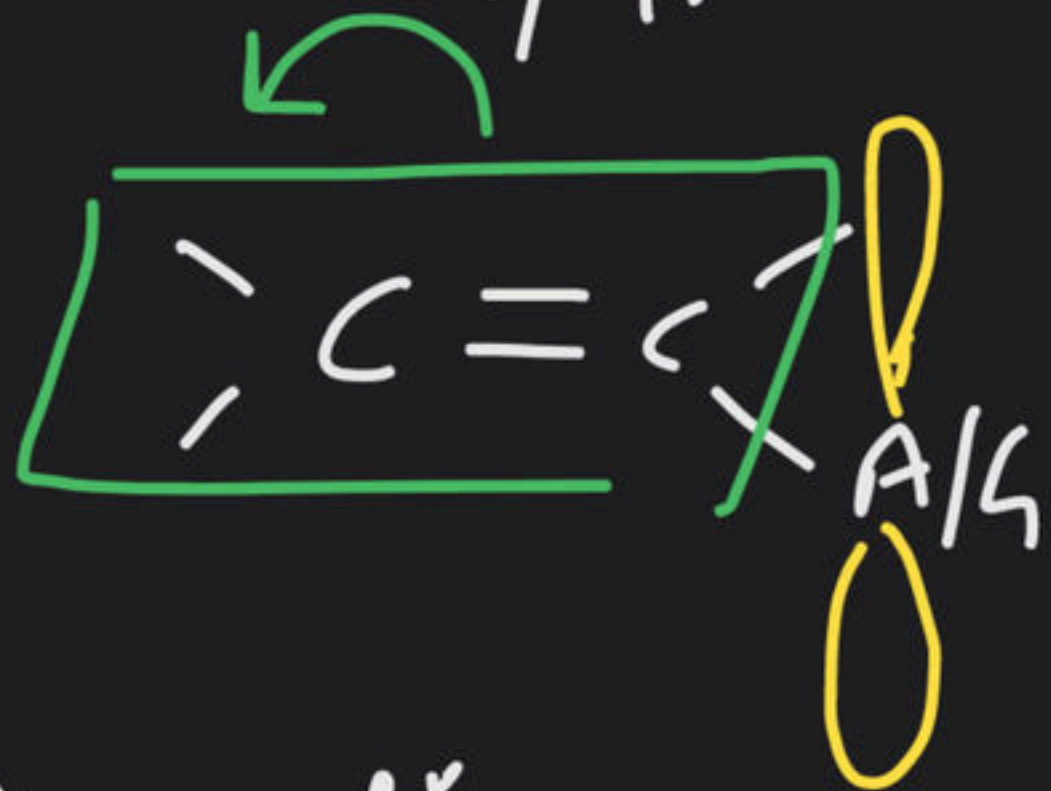
Resonance effect



There are two type of Resonance effect.

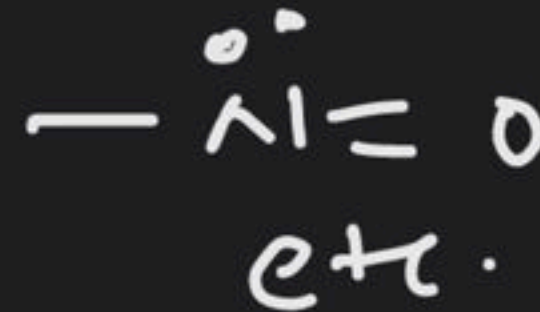
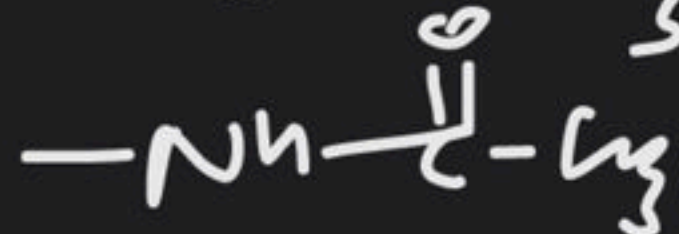
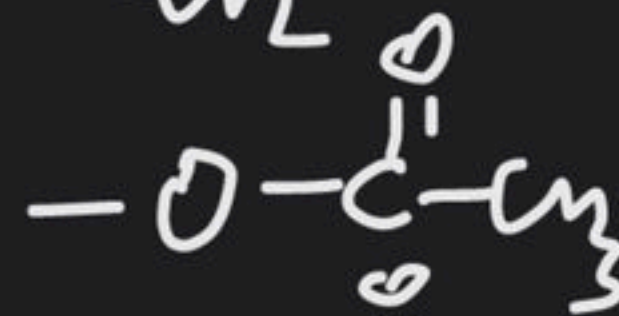
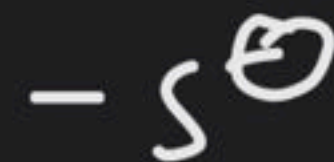
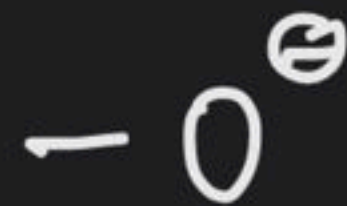
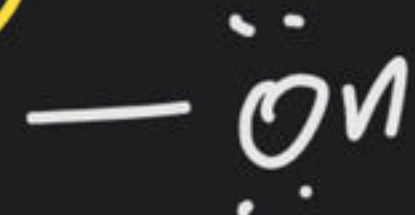
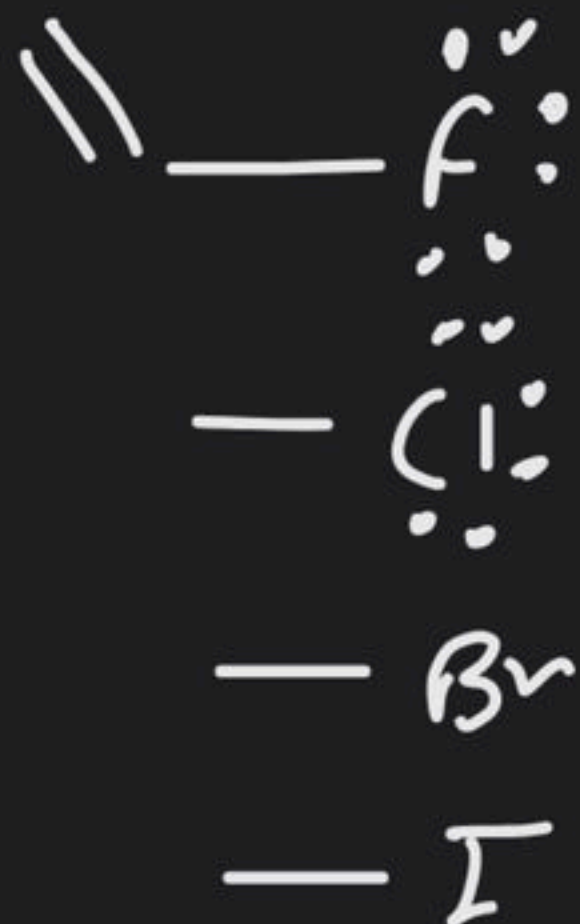
- (1) +R/+m effect Displacement of πe^-
density of a system away to parallel

of directly attached atom/group is known as +R/+M effect of that A/G.



\Rightarrow p orbital must be filled.
p (filled)

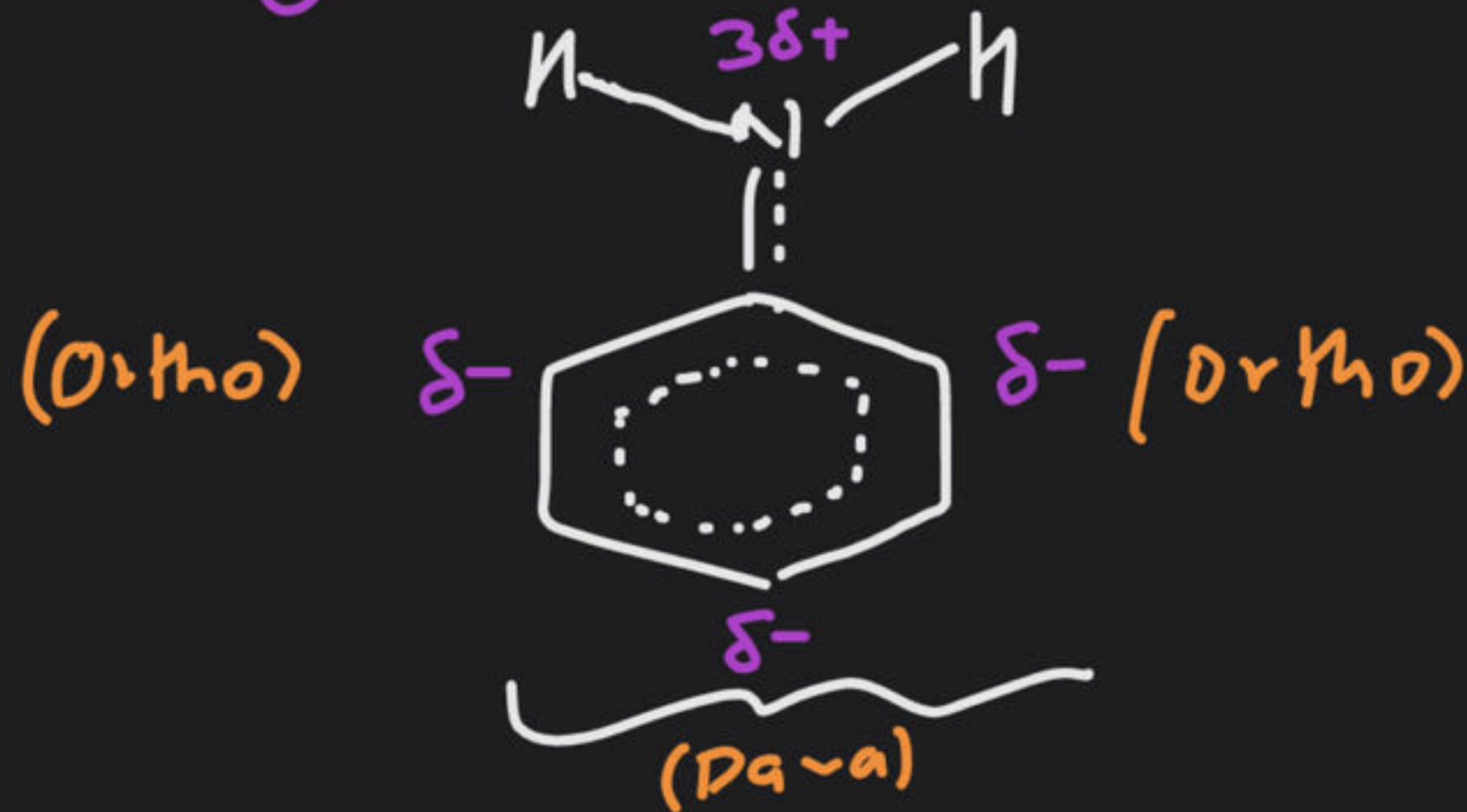
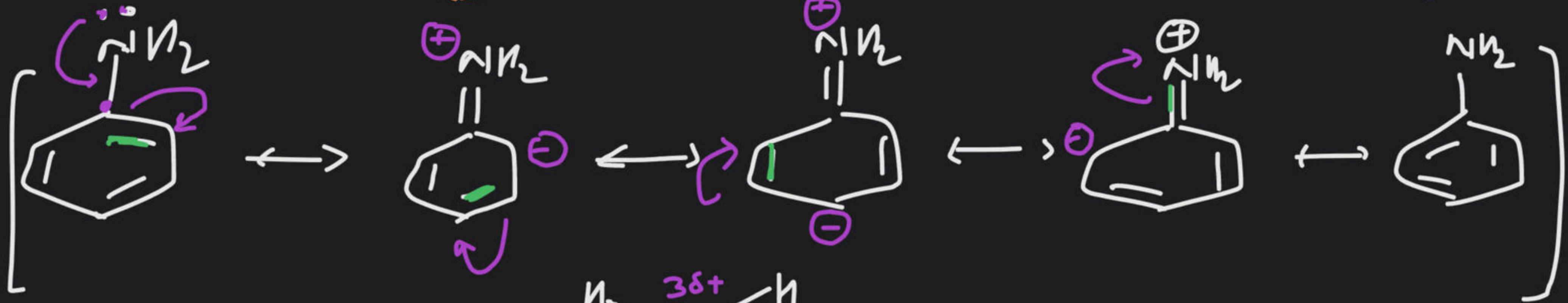
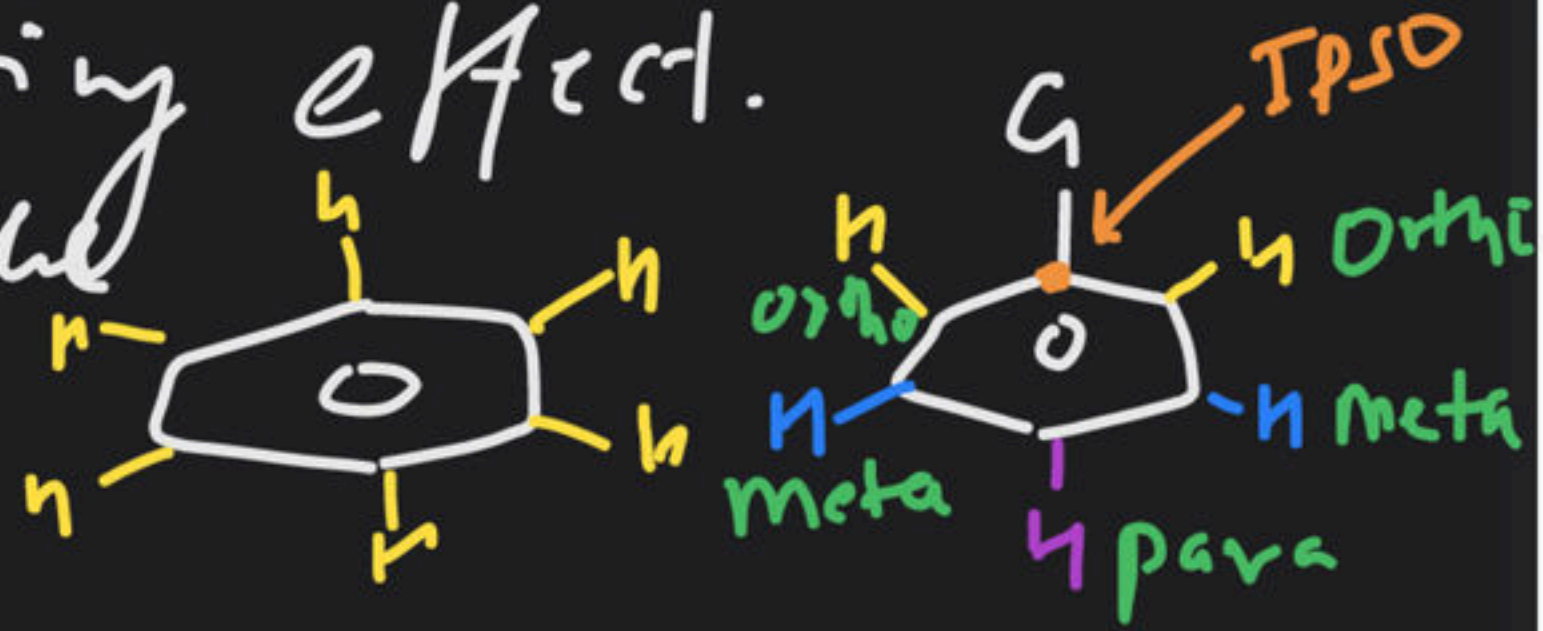
Note (ii)



(ii) +R/+m effect Electron donating effect.

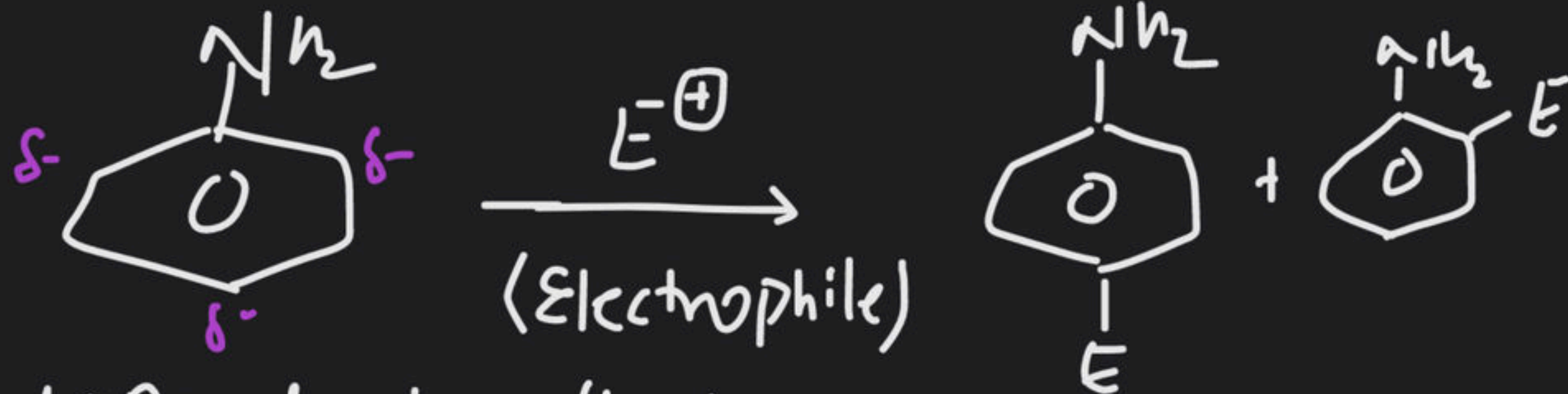
(iii) sites in Benzene & substituted Benzene

Ex! Aniline



(iv) +R/+M groups increases π electron density at ortho & para position (देने वाला देना है तो ortho/para पर देना है).

(v) +R/+M groups are ortho/para directing for incoming electrophiles.

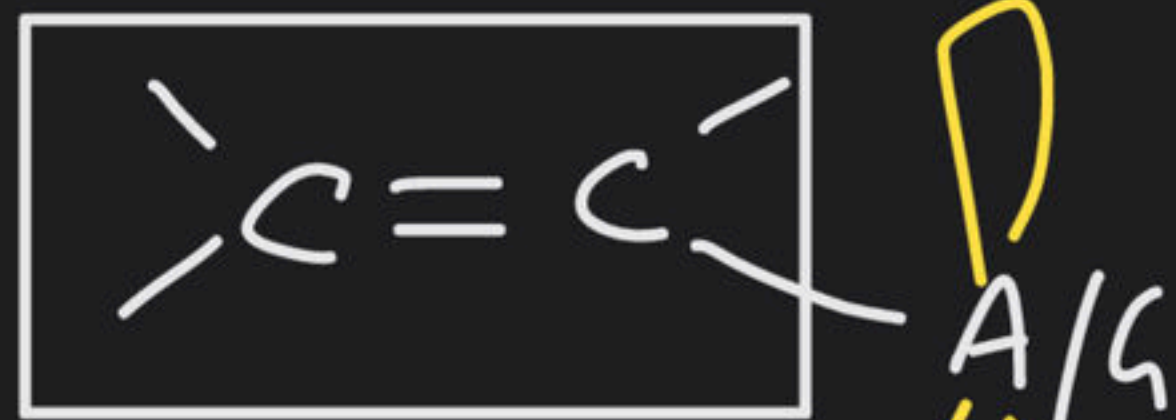


(vi) distance-independent effect

Ex: Draw RS for Phenoxide ion 

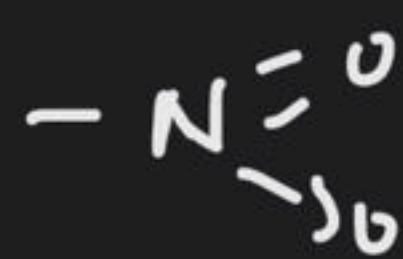
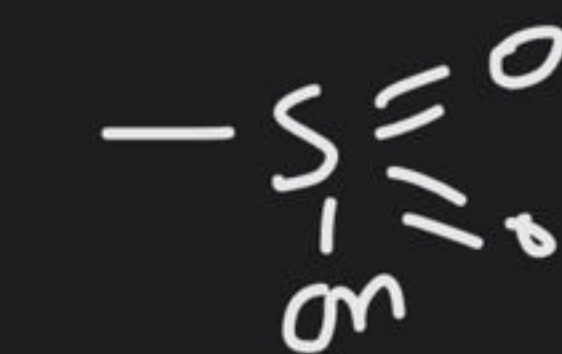
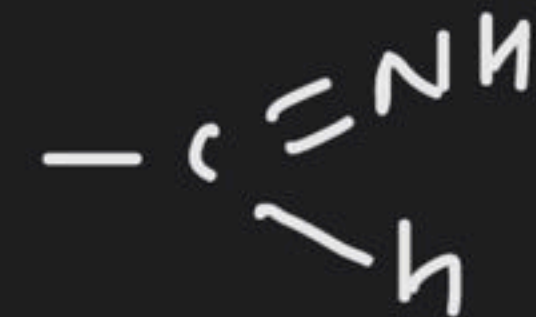
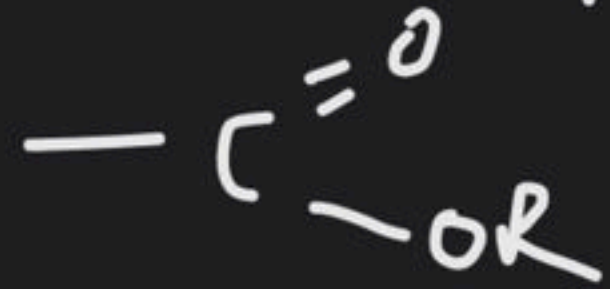
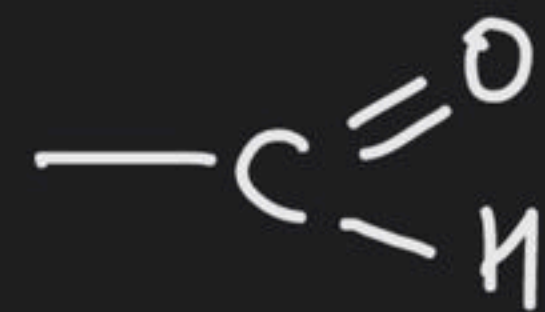
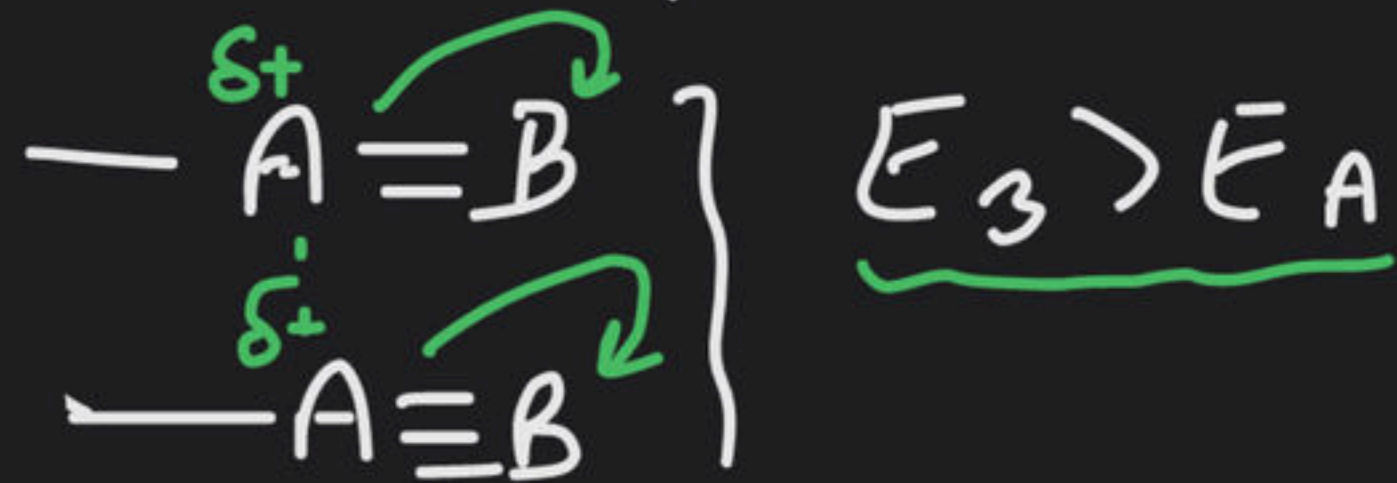
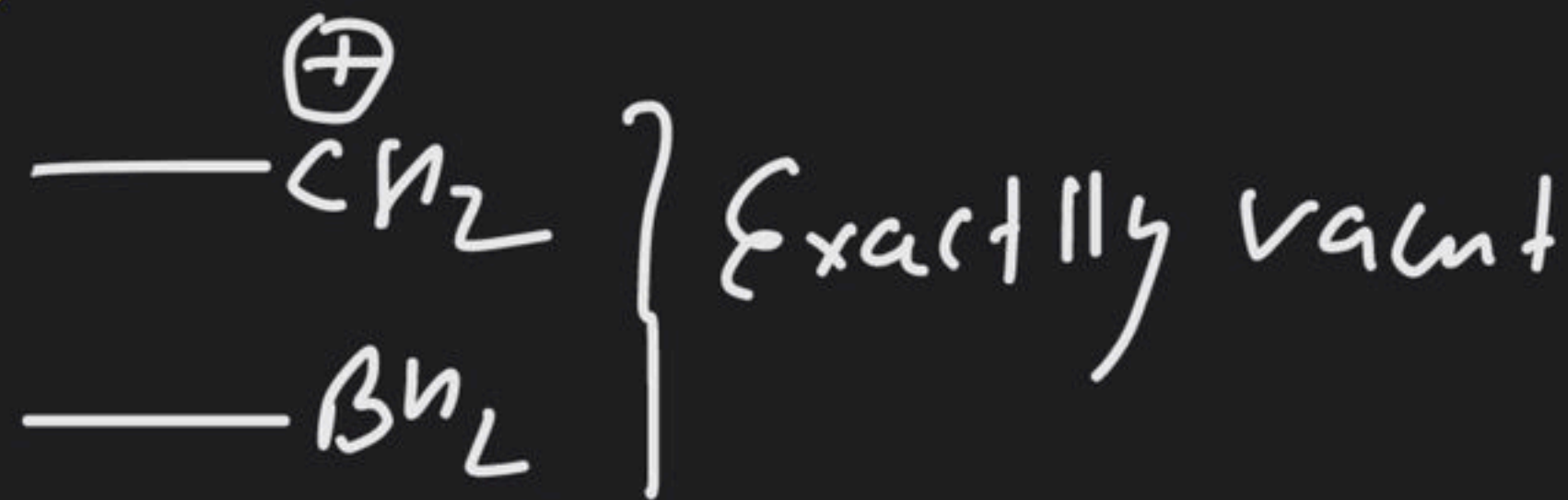
(2) -R/-M effect

When displacement of πe^- takes place towards the p orbital of directly attached atom/group it is known as -R/-M effect of A/G.



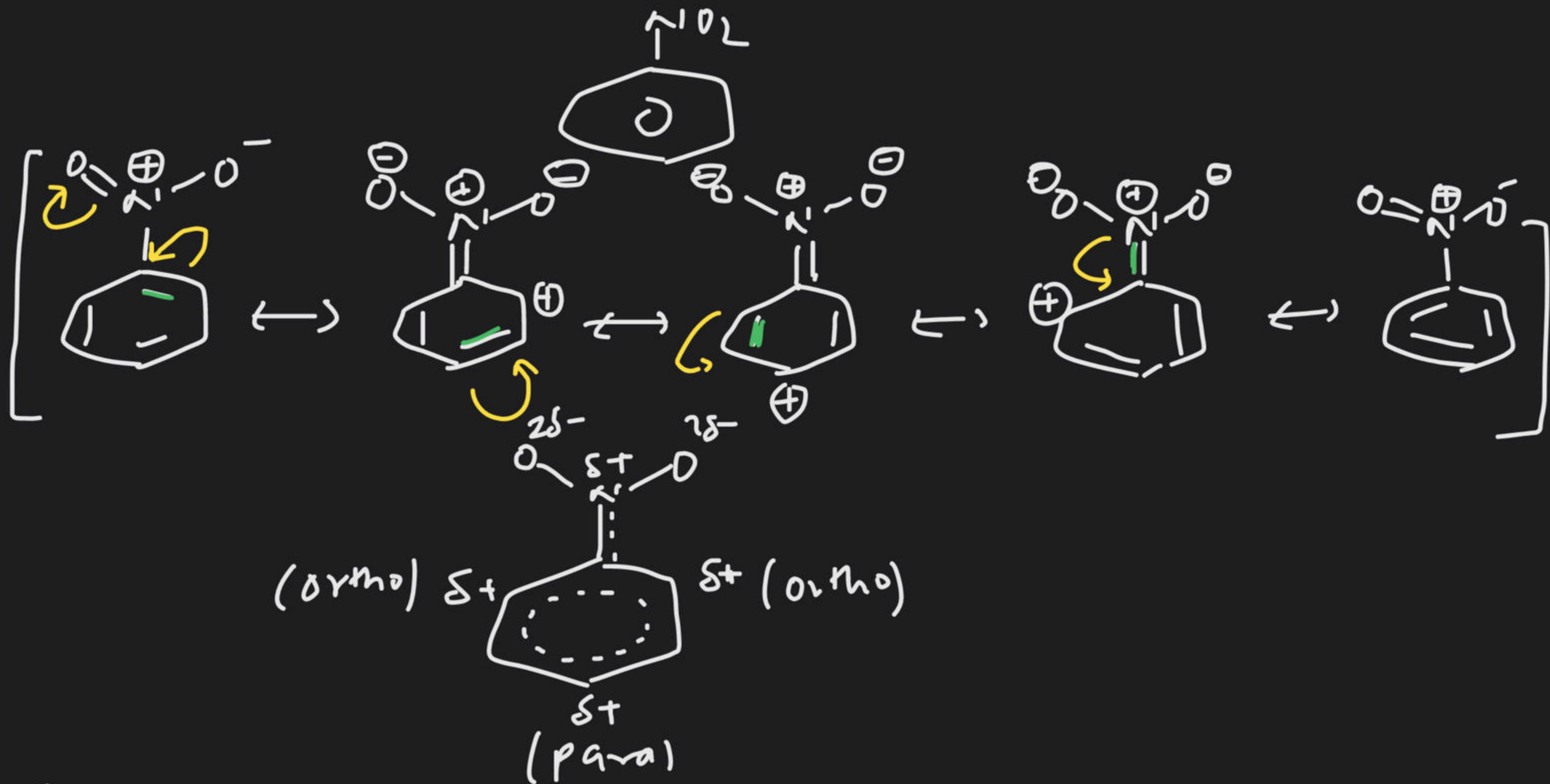
Note (i) p orbital wd be either exactly vacant

or may be vacant.



(ii) -R/-M effect is electron withdrawing effect

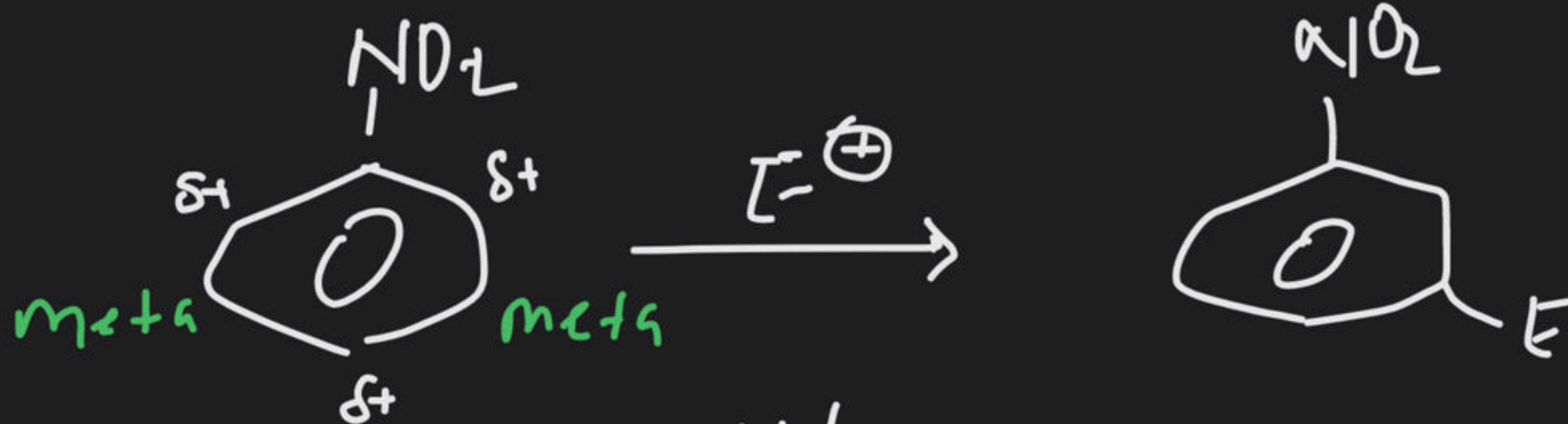
Ex: Draw RS of Nitro Benzene

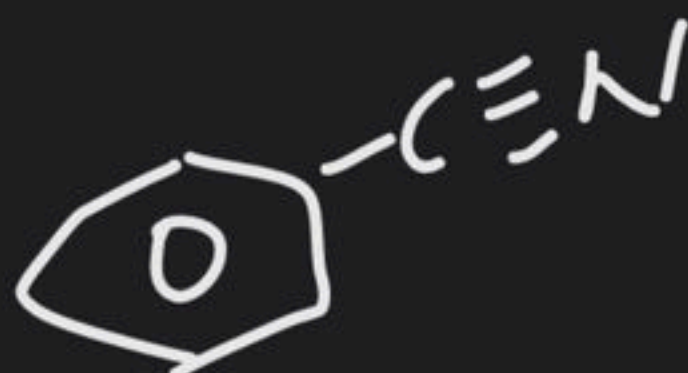


(ii) - R/M groups withdraw electrons

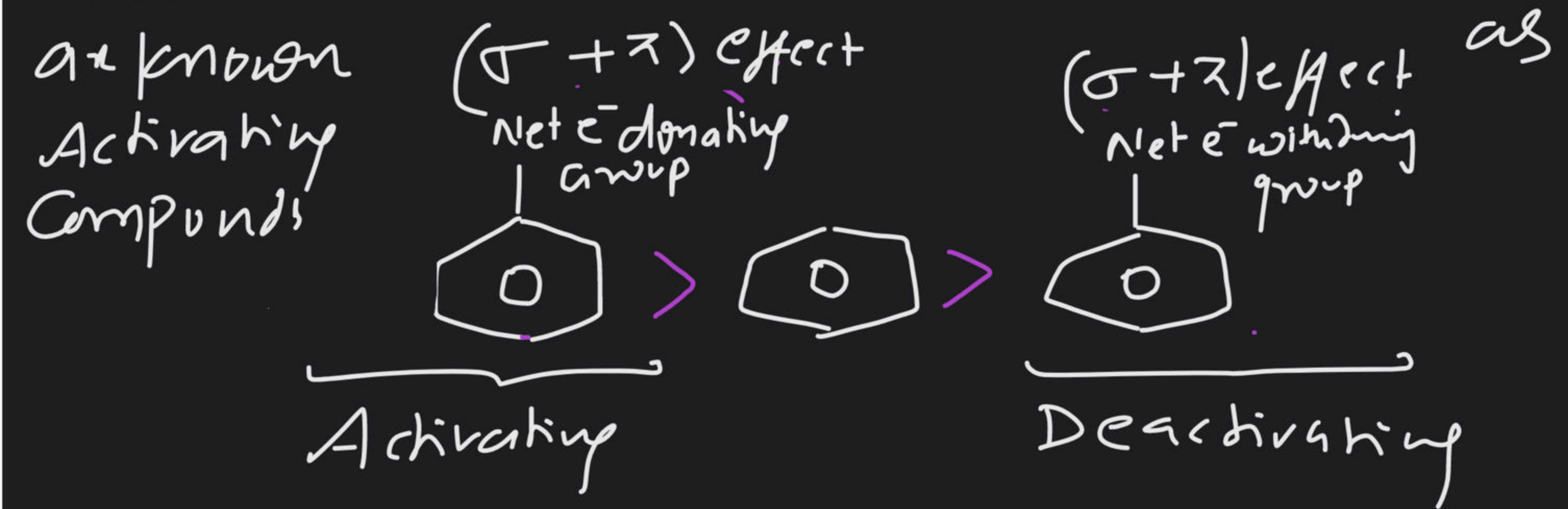
from ortho & para positions

In $-R/-M$ groups are meta directing for incoming electrophiles.



Ex: Benzonitrile 

(#) Activating Compound! All compounds which are more reactive towards electrophile than Benzene.



Note (i) For Activating & Deactivating tendency
Net electron density ($\sigma + \pi$) is considered.

Deactivating Compounds

less reactive - - -

Compounds which are

Note

(i) halogen in halobenzene is net electron
withdrawing in nature & inductive
effect dominates over Resonance effect

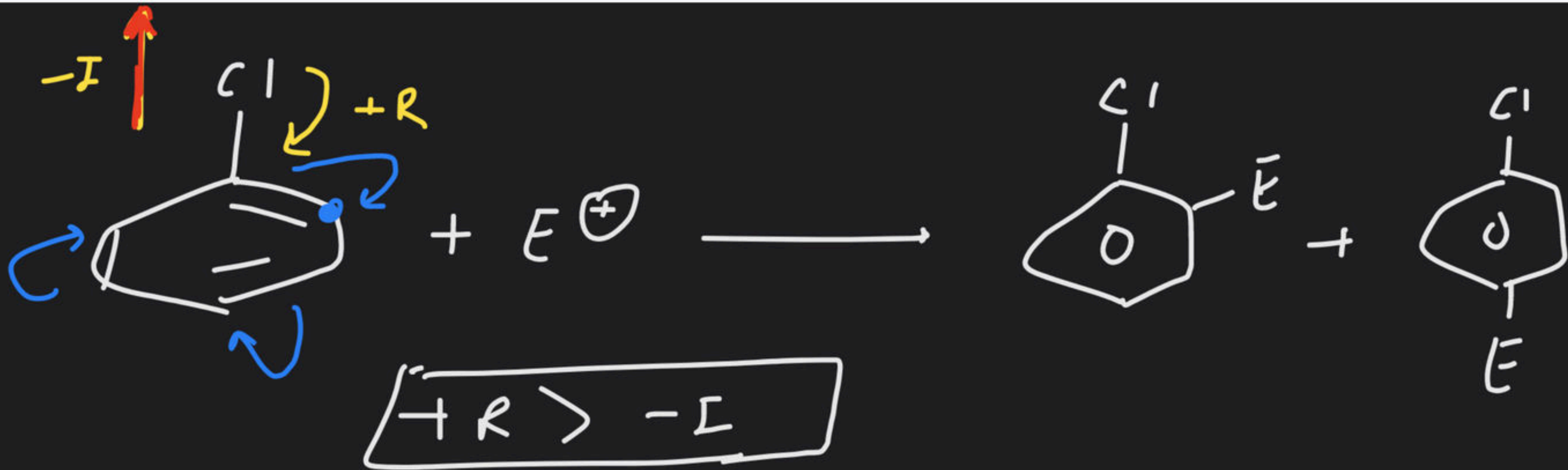
$(-I > +R)$ when deciding among other compounds



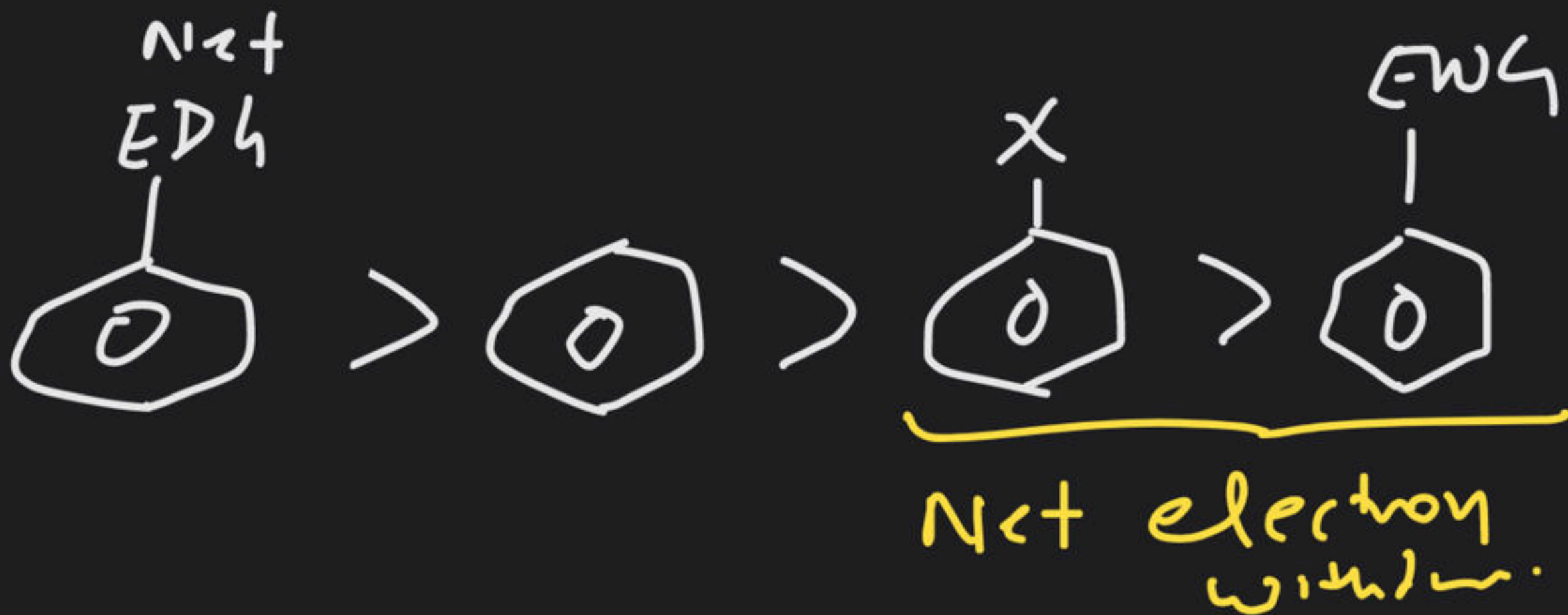
M.T.M



(ii) $+R$ dominates over $-I$ ($+R > -I$) in halo benzene when a incoming electrophile is approaching site in halobenzene.

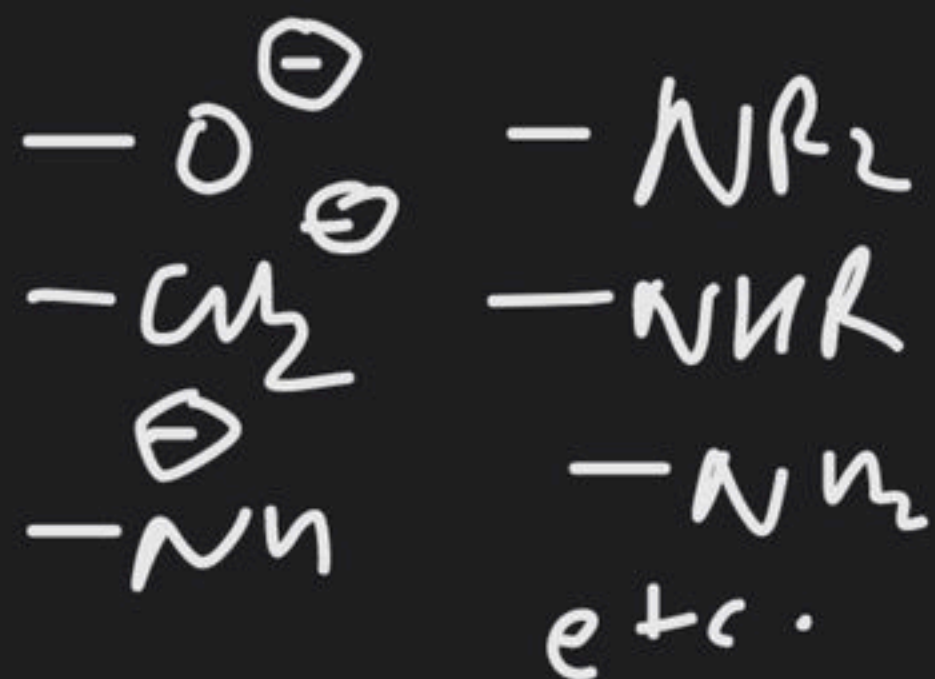


(iii) Electrophilic attack order

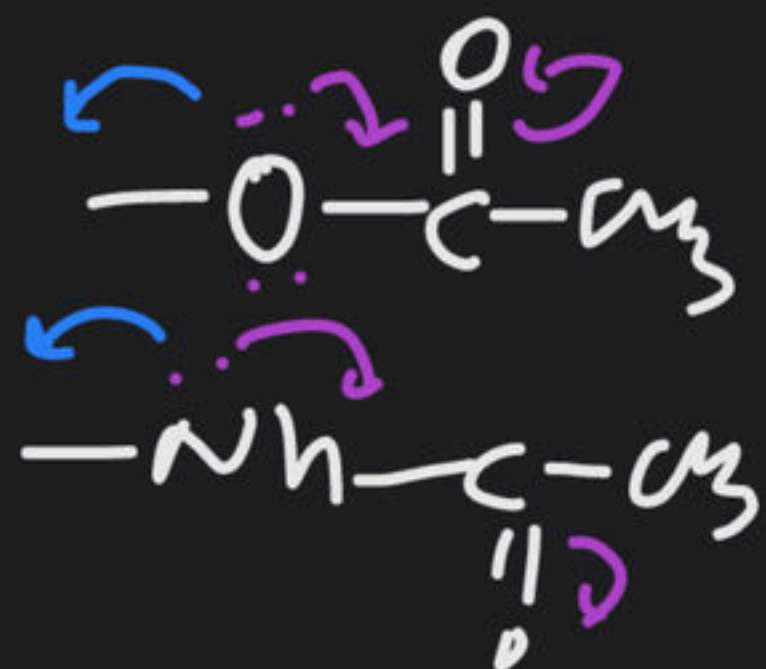


Activating Compound

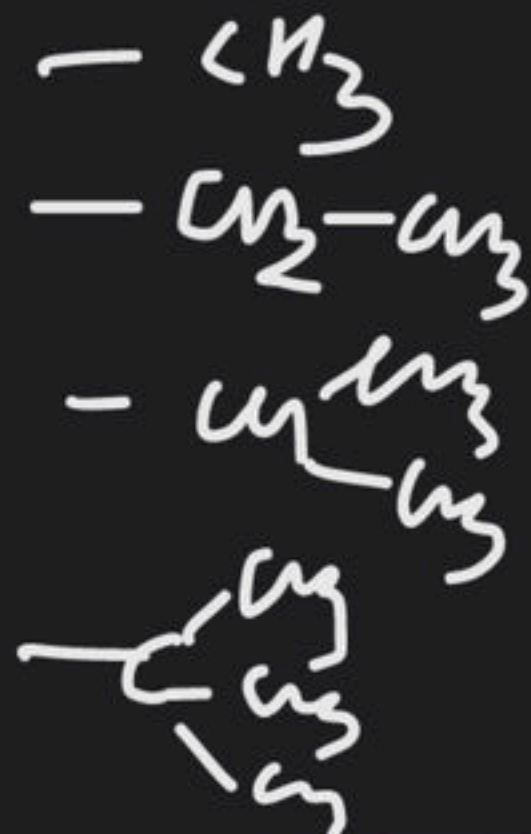
Highly Activating



moderately Activating



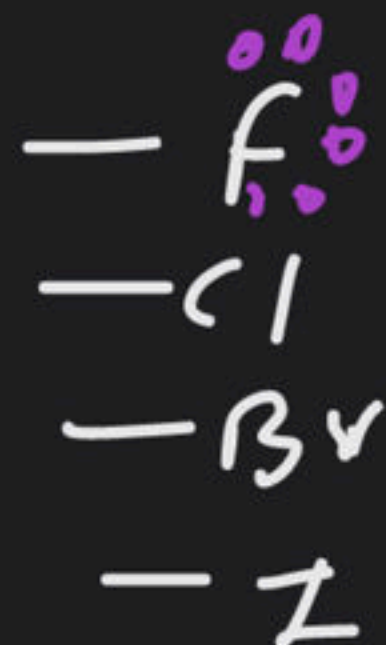
Weakly Activating



O & P directing.

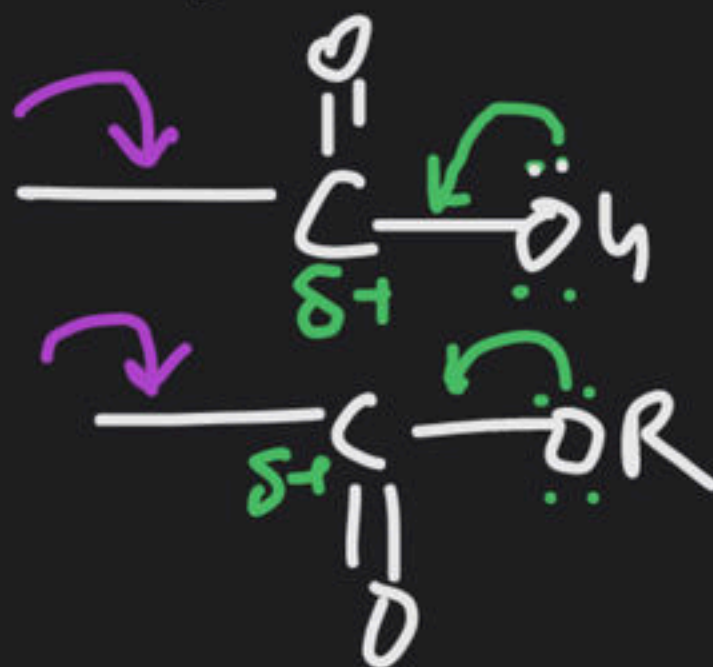
Deactivating Groups

Weakly deactivating

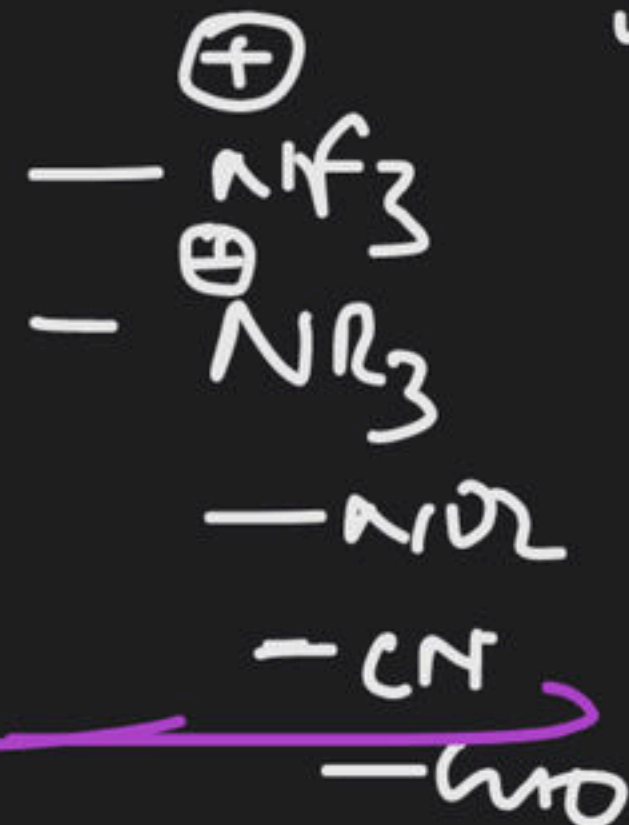


O & P directing

Mod. deactivating



Highly deactivating



Meta directing

Ex-1 Arrange following in decreasing order of rate of electrophilic attack

(a) Benzene, Toluene, Chlorobenzene

(b) m-xylene, p-xylene, Toluene

(c) Aniline, phenol, Acetophenone

(d) Phenol, phenyl Benzoate, Cumene

(e) o-Toluidine, toluene, Aniline

(f) Anisole, Ethyl Benzene, Nitro Benzene

▲ 7 • Asked by Athrva

sir aapki aashirvad amrit roopi.....ye jaivik rasayan vigyan ki neeli kitaab aa gayi.....ek apne mukh se bhi ashirvad ki varsha kr dein.....hini medium op

