:Carbon Free Radical:-

⇒ Trivalent in nature
⇒ having incomplete octet
⇒ highly unstable
⇒ highly reactive
⇒ formed By homolytic fission

⇒ having partially vacant abital.
⇒ BP (Bond pair) = 3
⇒ UP (Unpair) = 1 (n)
⇒ LP (lone pair) = 0
⇒ mm (magnetic moment)
$= \sqrt{n(n+2)} = \sqrt{3}$
⇒ SM (spin multiplicity)
$= 2|S| + 1$
$= 2\left(\frac{1}{2}\right) + 1 = 2$ ∴

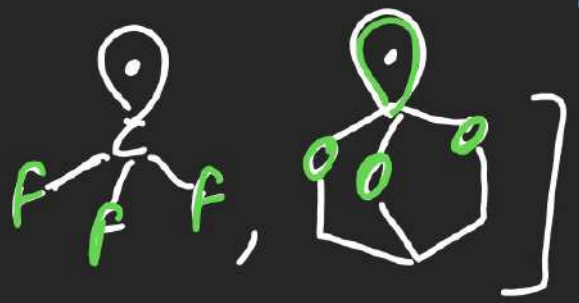
UP = 0	S = 0
UP = 1	S = $\frac{1}{2}$
UP = 2	S = $\frac{1}{2} + \frac{1}{2}$
⋮	⋮

⇒ Paramagnetic in nature

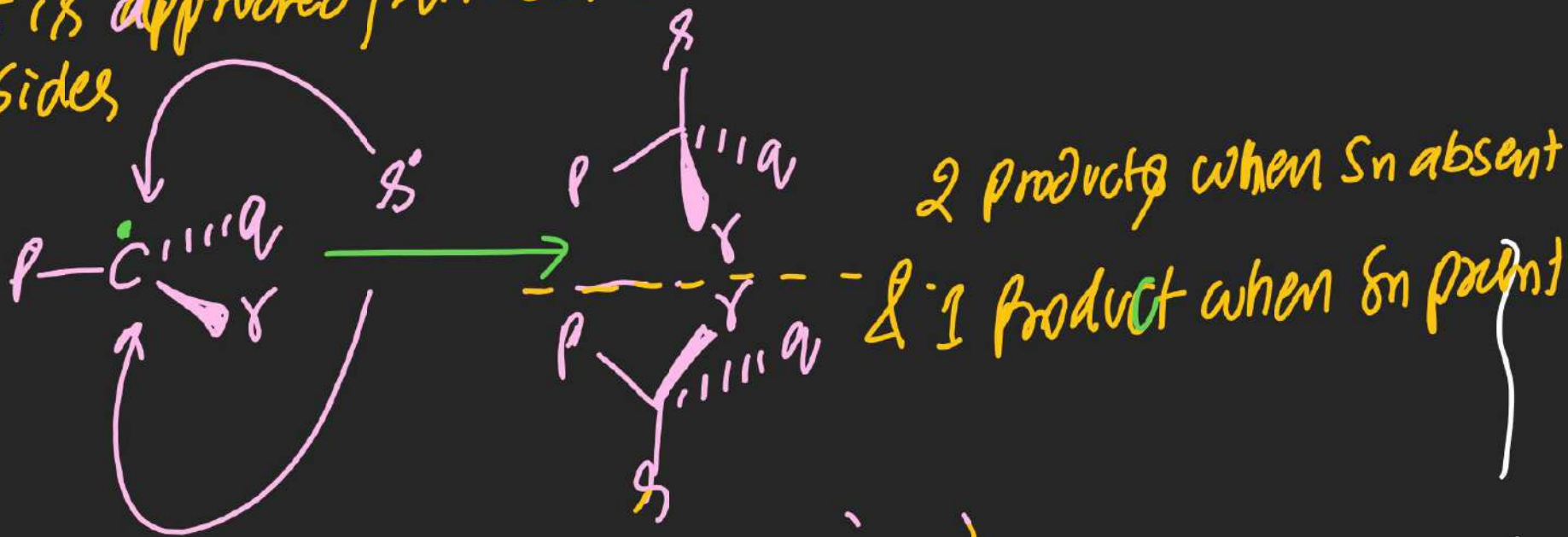
⇒ hybridisation ⇒ sp^2 [hybridisation sp^3

⇒ Bond angle = 120°

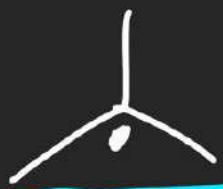
⇒ Trigonal planer



⇒ It is approached from Both Sides

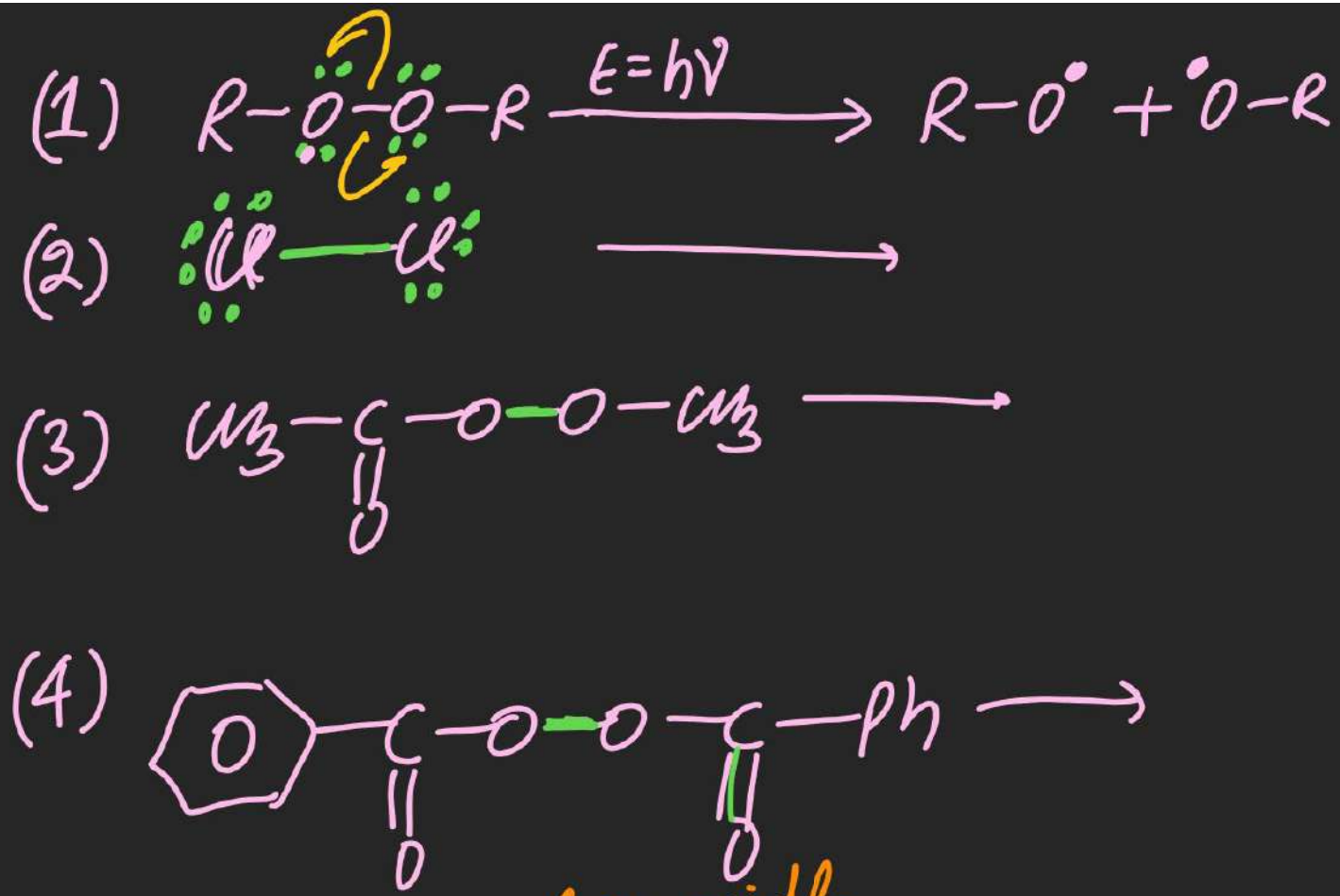


⇒ **Stability order**

$Ph_3\dot{C} > Ph_2\dot{C}H > Ph-\dot{C}H_2 >$  $>$  $>$  $> CH_3-\dot{C}H_2 > \dot{C}H_3 > \dot{C}H=CH_2 >$  $> \dot{C}\equiv CH$

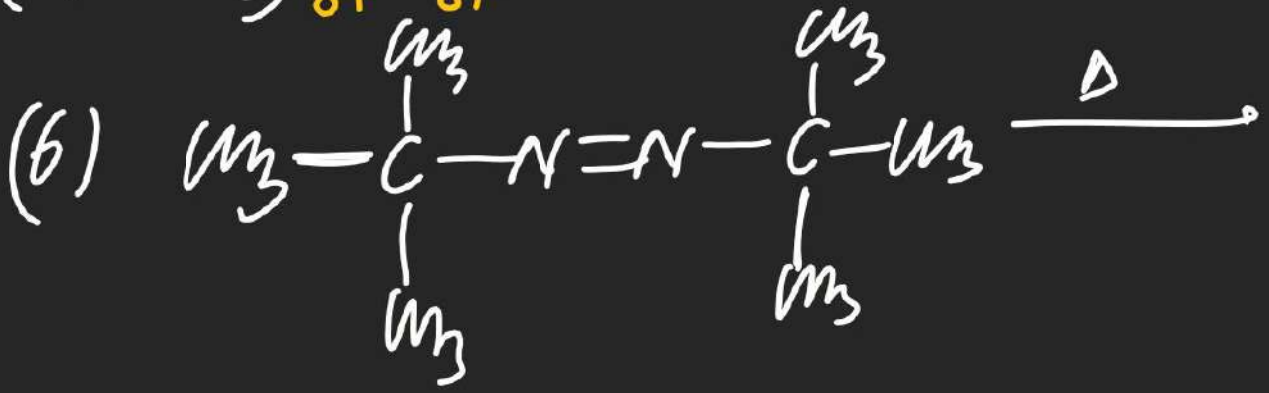
Generation of free Radical

(1) **By Photolysis:** For homolytic fission photons of UV rays is used & process is known as Photolysis



(2) Thermolysis (Pyrolysis): - By heating homolytic fission is carried out.

(5) 

(6) 

(7) 

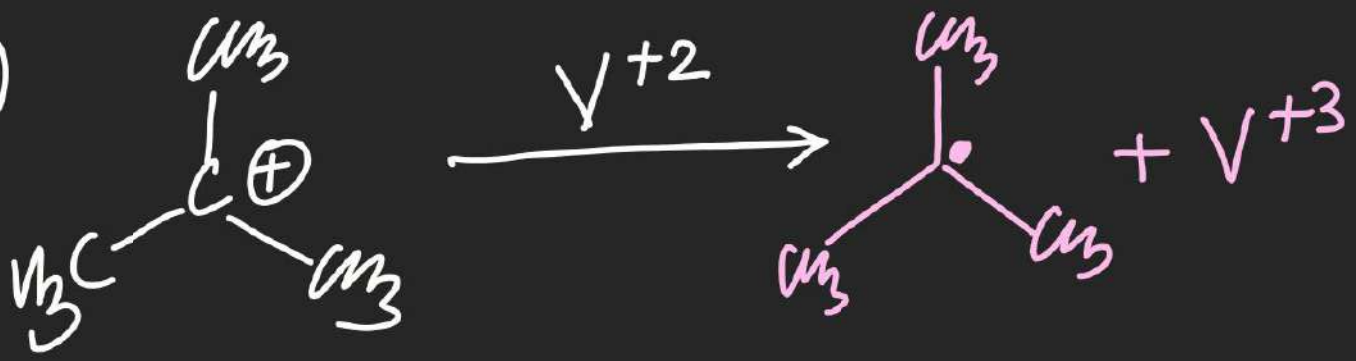
Cyclopropane

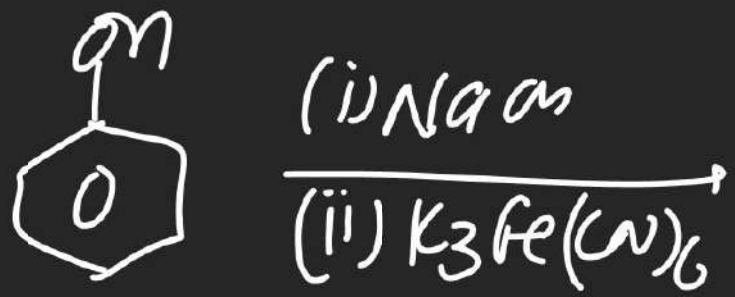
(3) By use of metal & metal ion:-

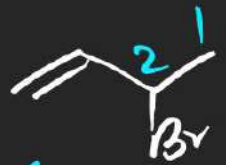
(8) $Na + R\overset{\delta+}{-}X\overset{\delta-}{} \longrightarrow R^{\bullet} + Na^{+}X^{-}$

(9) 

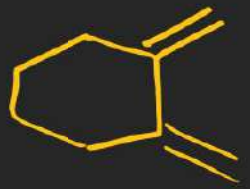
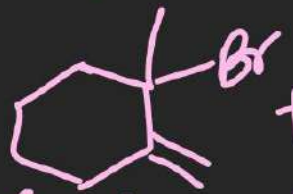
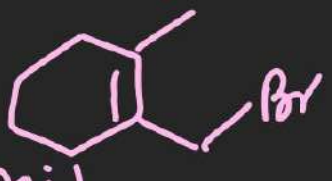
(10) 

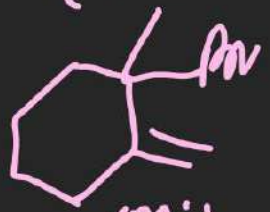
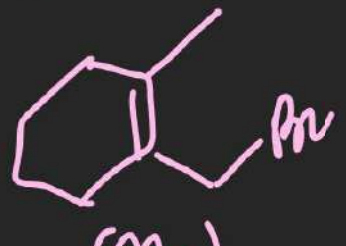
(11) 

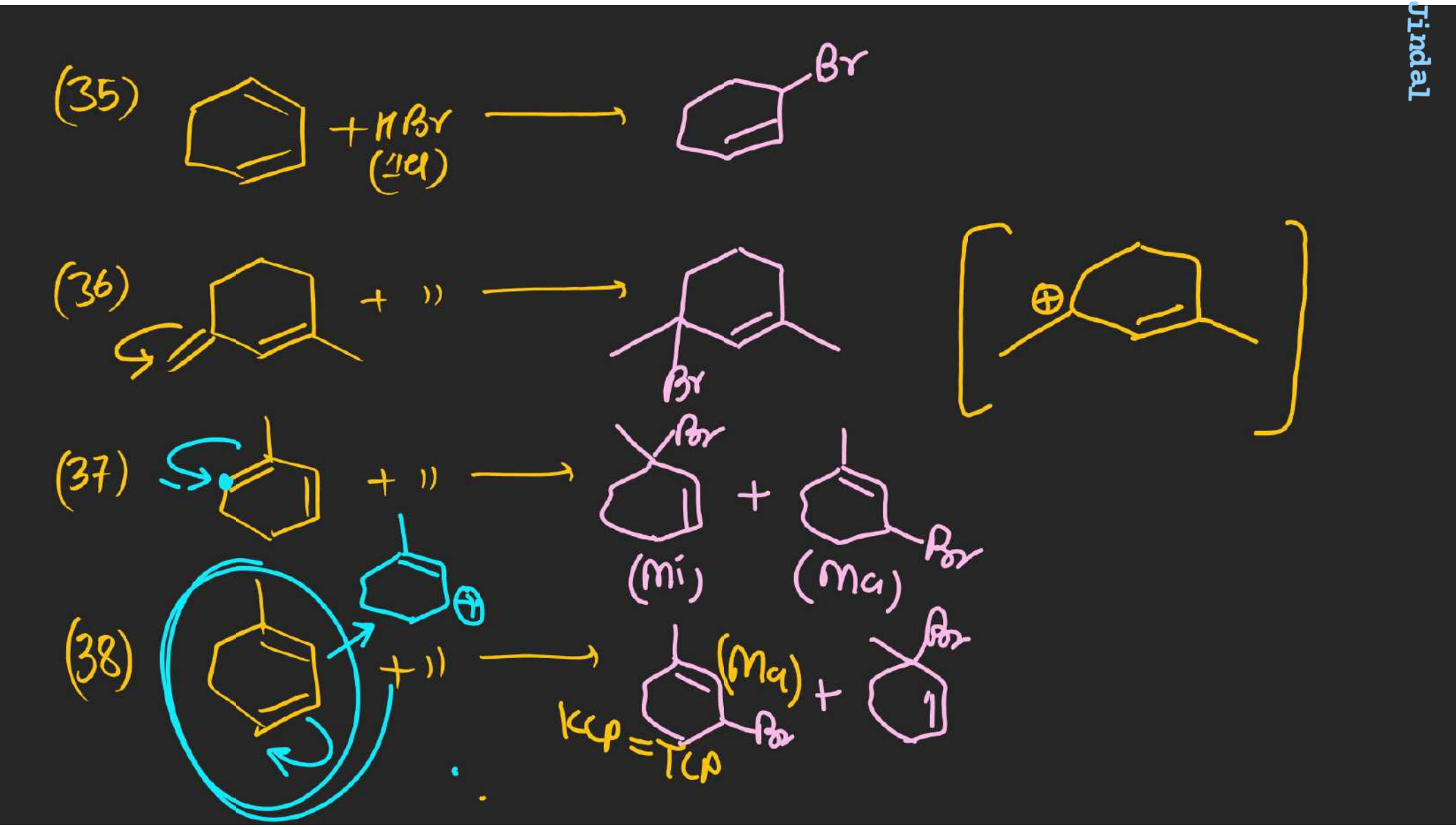
(12) 

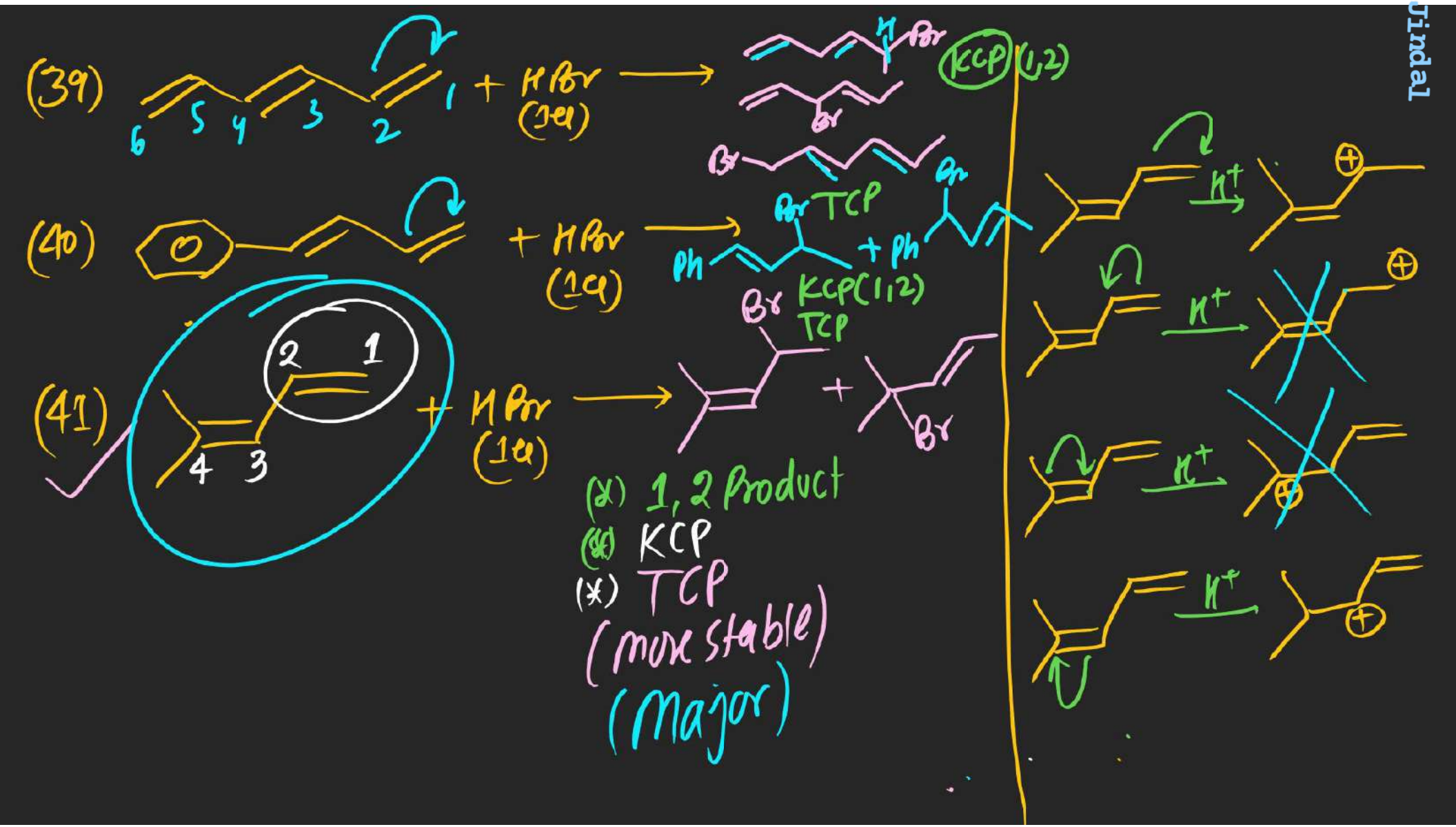
(31)  + HBr (1eq) $\xrightarrow{-80^\circ C}$  (major) +  (minor)

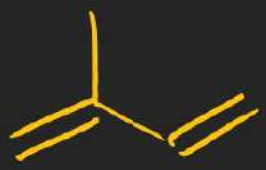
(32)  + HBr (1eq) $\xrightarrow{35^\circ C}$  (minor) +  (major)

(33)  + HBr (1eq) $\xrightarrow{-80^\circ C}$  (Ma) +  (Mi)

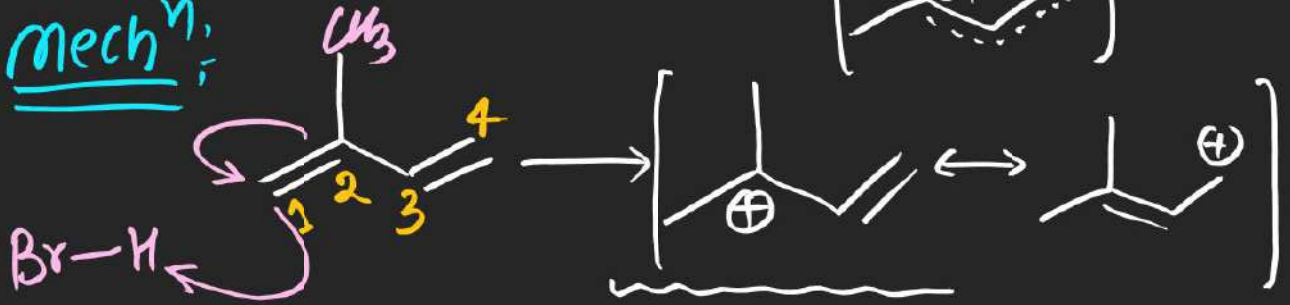
(34)  +  $\xrightarrow{+80^\circ C}$  (Mi) +  (Ma)



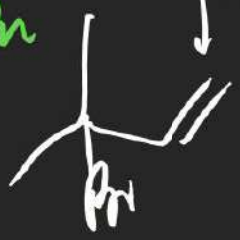


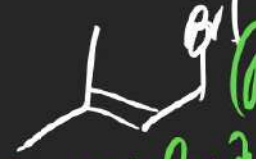
(42)  + HBr (1eq) ⟶

Mechⁿ:



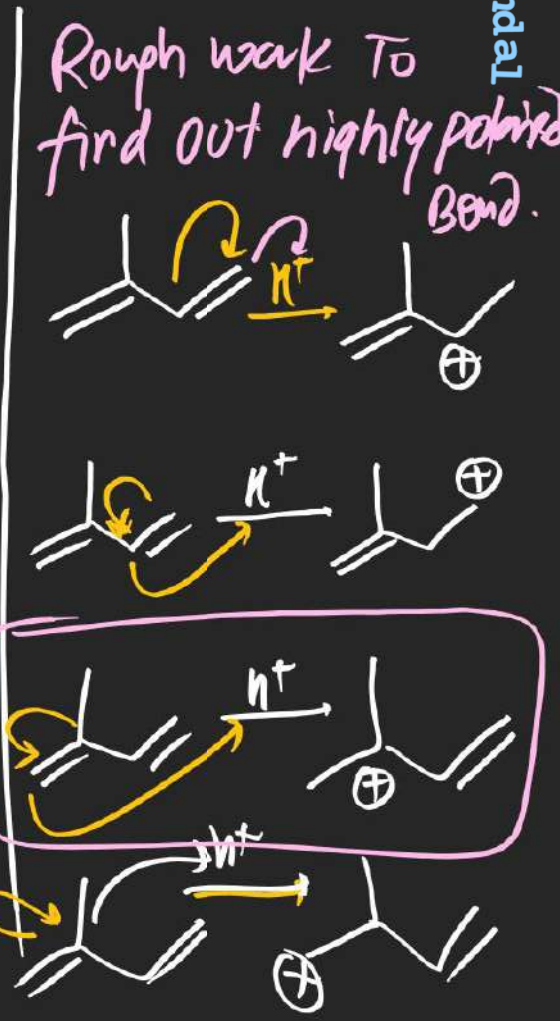
(M) 1,2 Pdt
(V) KCP





(major)
(M) 1,4 Product
(V) TCP

Rough work To find out highly polarised Bond.



HW

BB

Theory Copy

isomerism

Ex-Jee mains