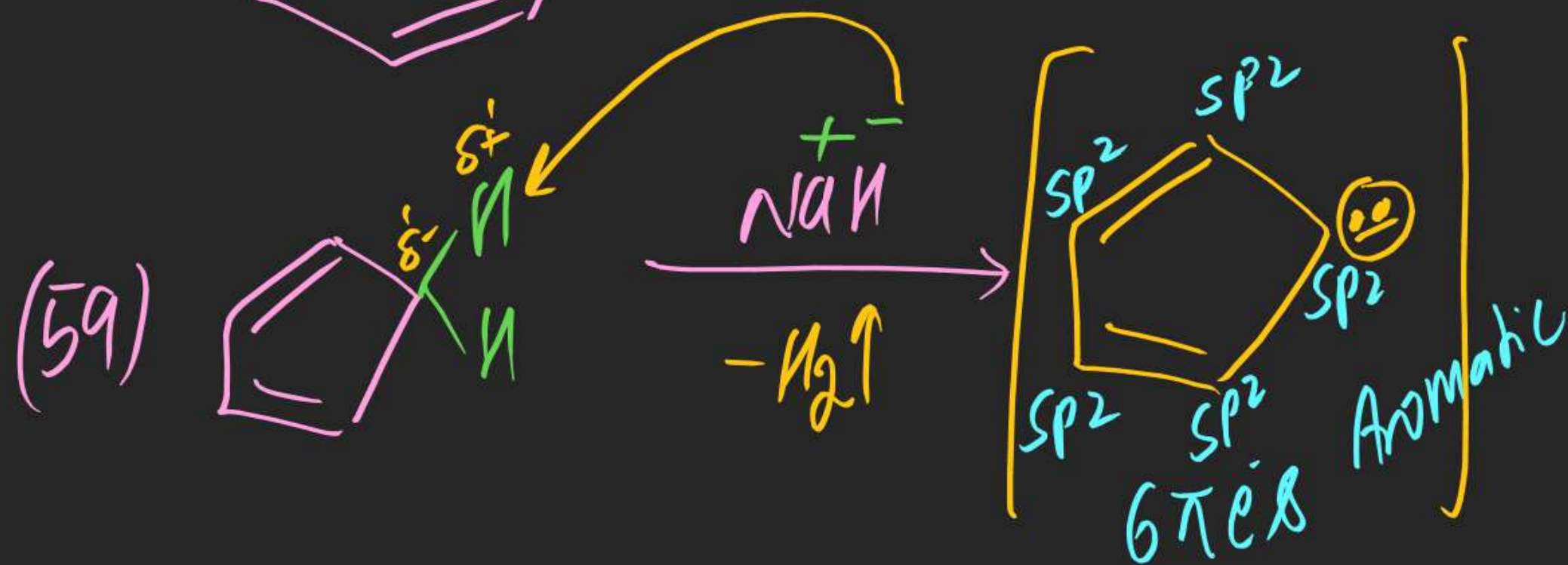
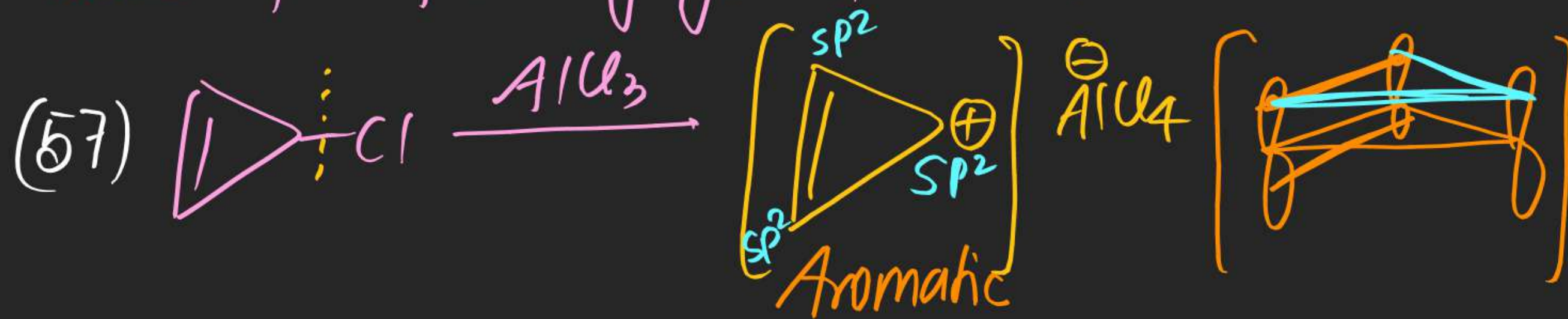
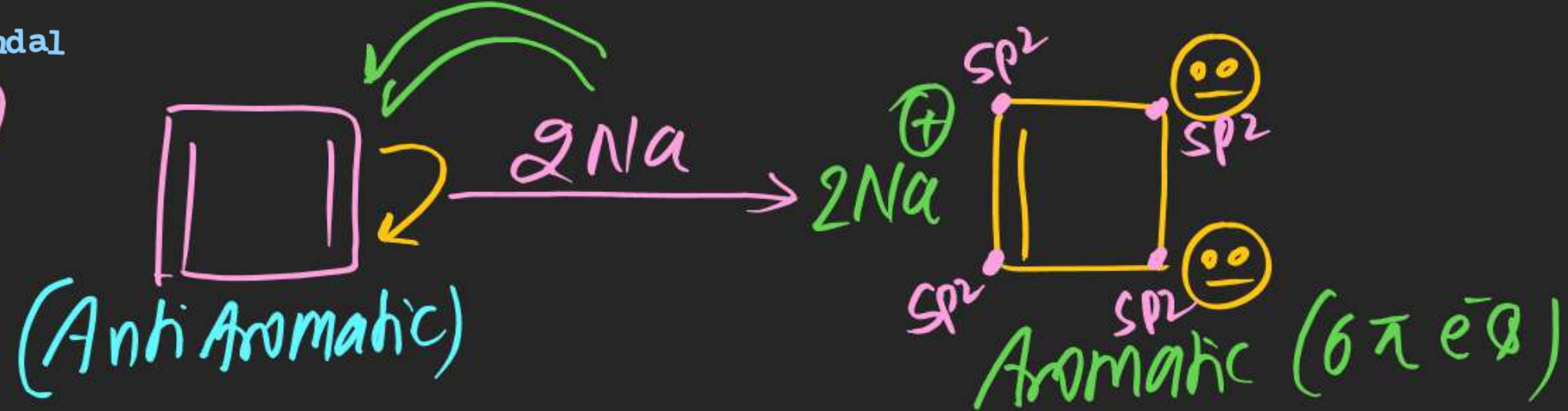


Which of the following gives Aromatic product



(60)



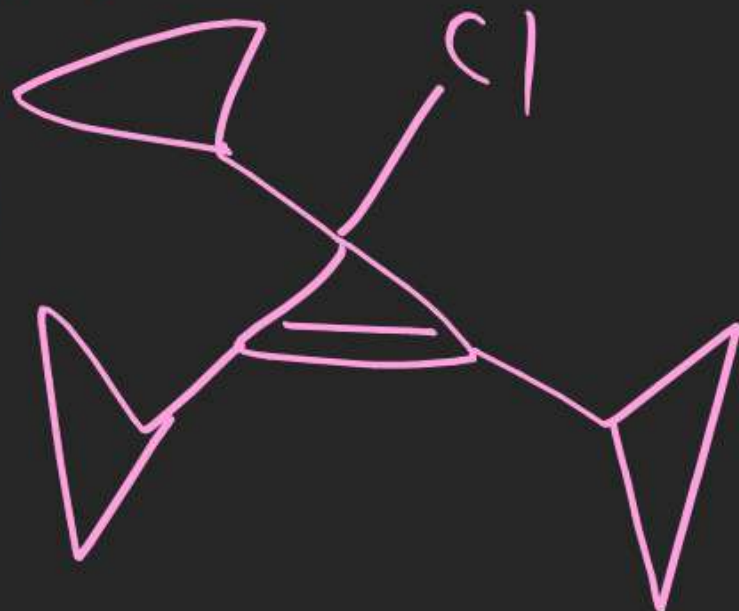
(61)

$8\pi e^-$

(Non Aromatic)

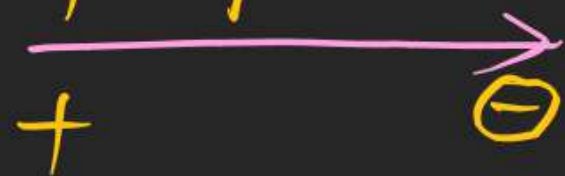


(62)

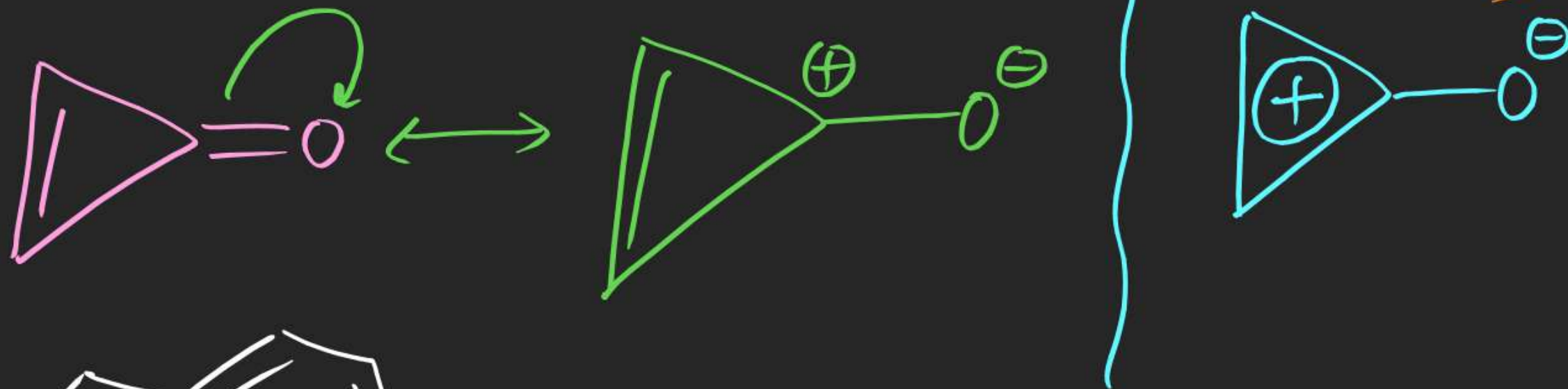


AlU_3

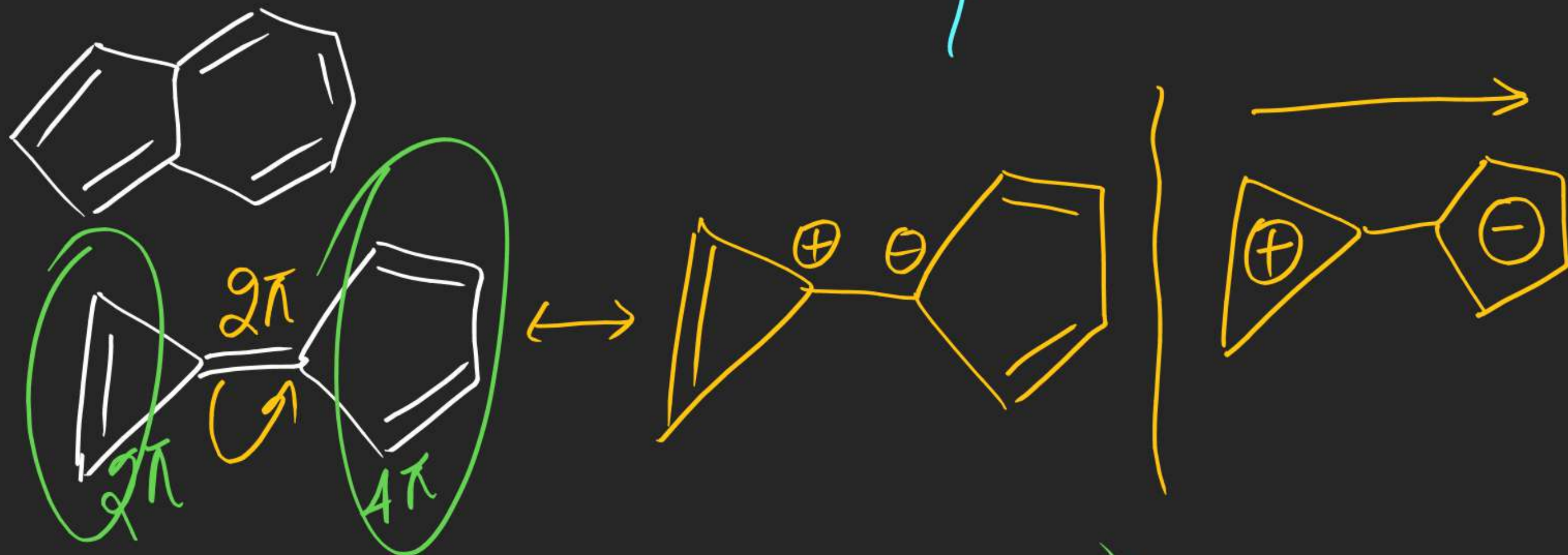
(#) Predict direction of dipole moment



(63)

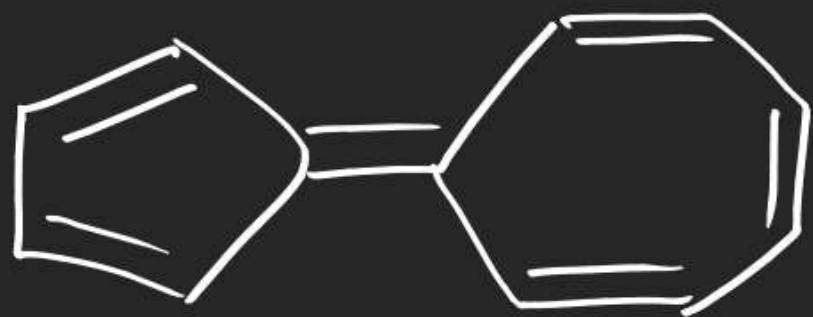


(64)

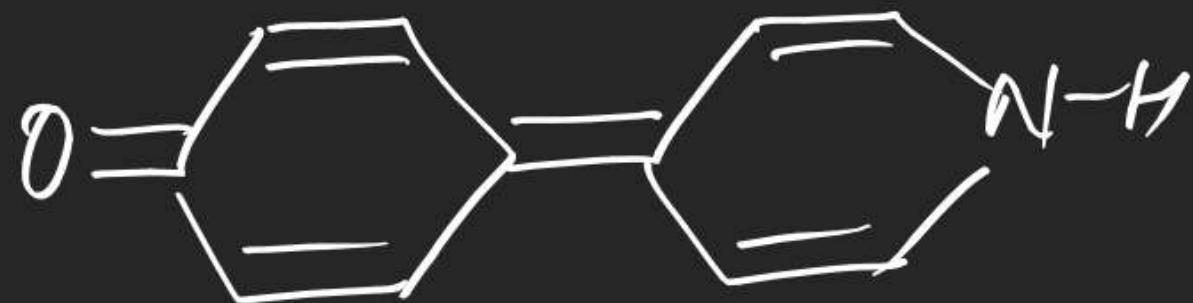


(65)

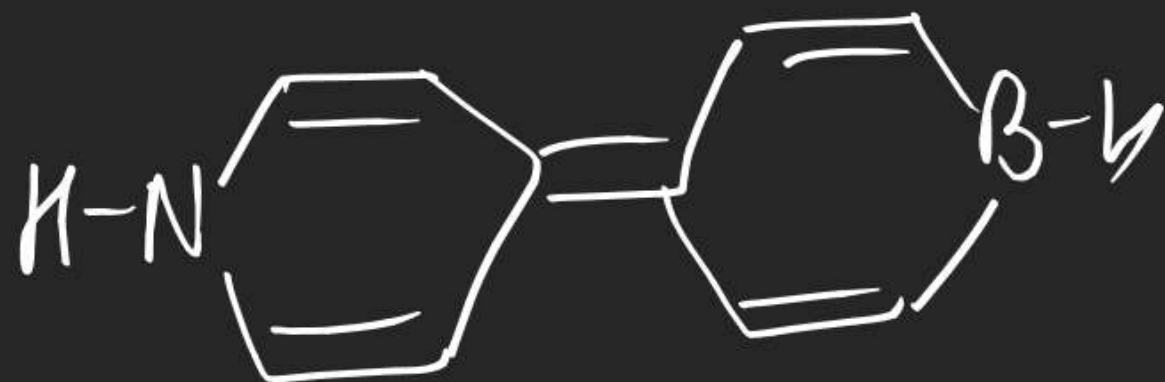
(66)



(67)

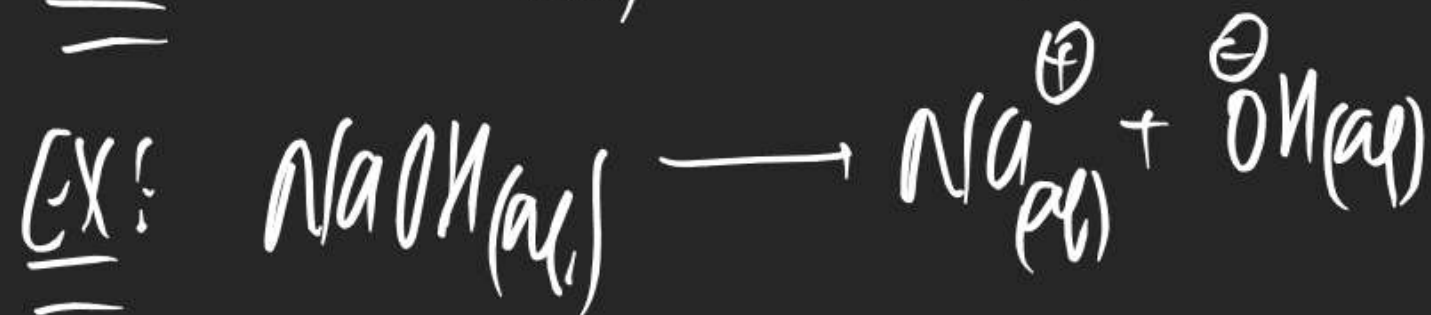
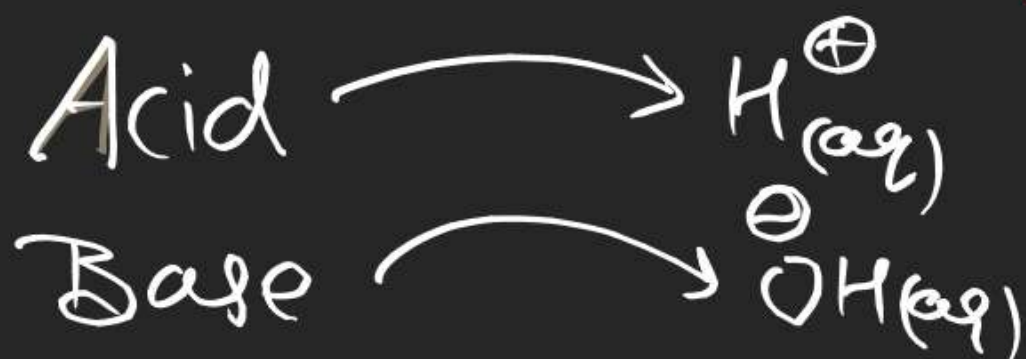


(68)

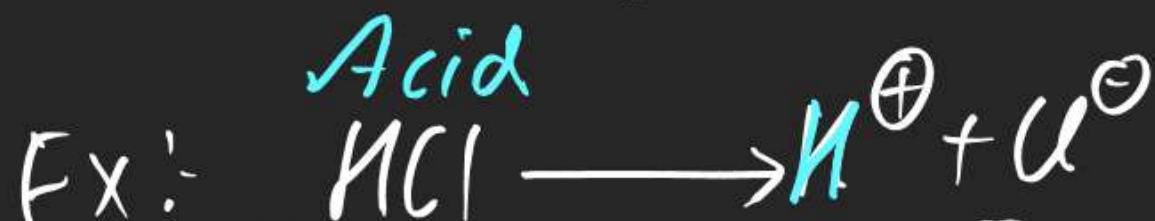


Acid & Base

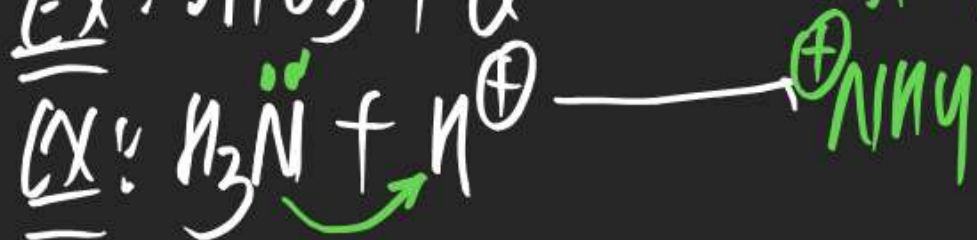
Arrhenius Theory: Acids are substances which give H^+ ion in aq. soln whereas Bases are substances which give OH^- ion in aq. soln.



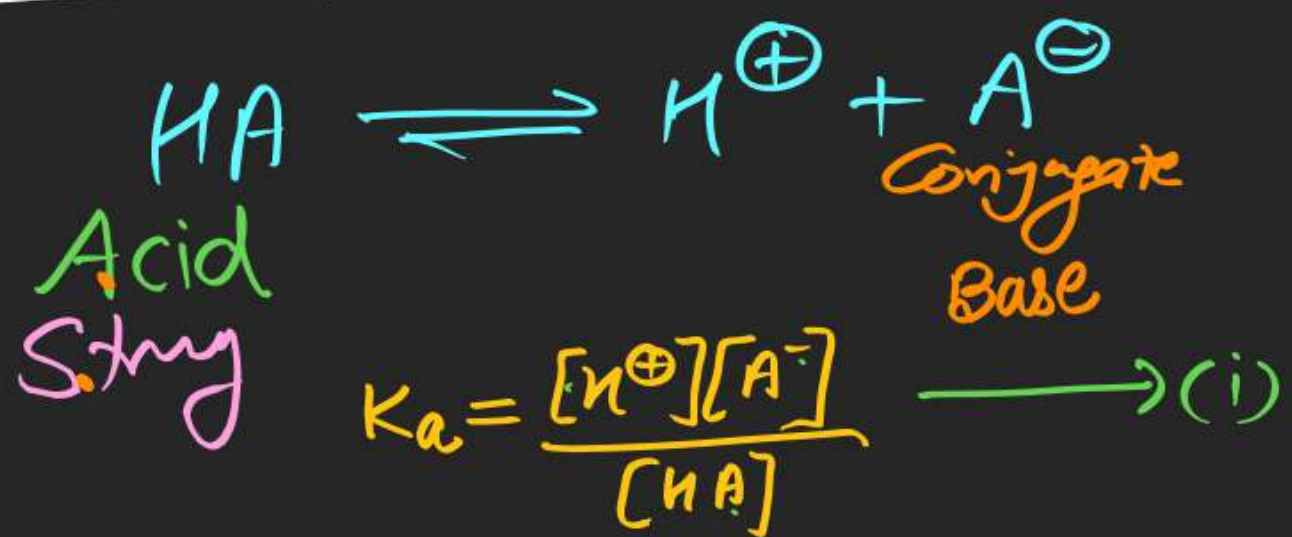
Bronsted & Lowry: Acc. to this theory Acids are proton ^{H⁺} donor whereas Bases are proton ^{H⁺} acceptor.



Lewis Theory Acc. to this theory Acids are \bar{e} pair acceptor & Bases are \bar{e} pair donor.



⇒ let us consider Acid HA & \ddot{B}

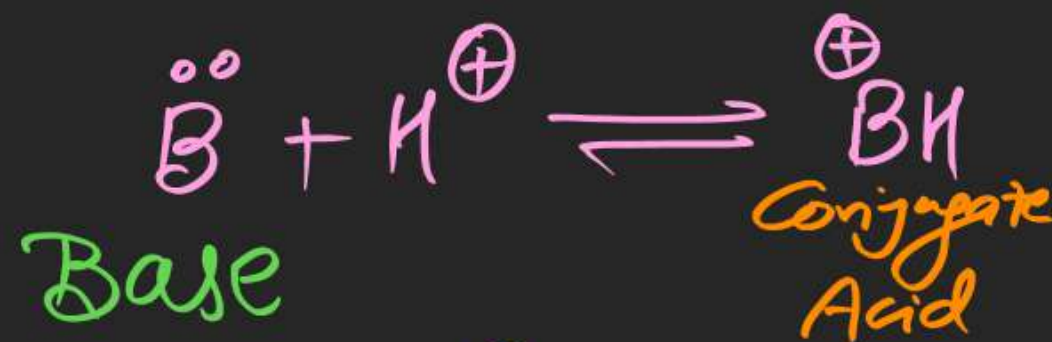


Acidic strength of HA \propto stability of A^{\ominus}
 \propto EWG
 $\propto K_a \propto \frac{1}{pK_a}$

Note (i) Deprotonation generates Conjugate Base

(ii) Protonation generates Conjugate Acid

(iii) A Strong Acid & Strong Base is relatively unstable in nature

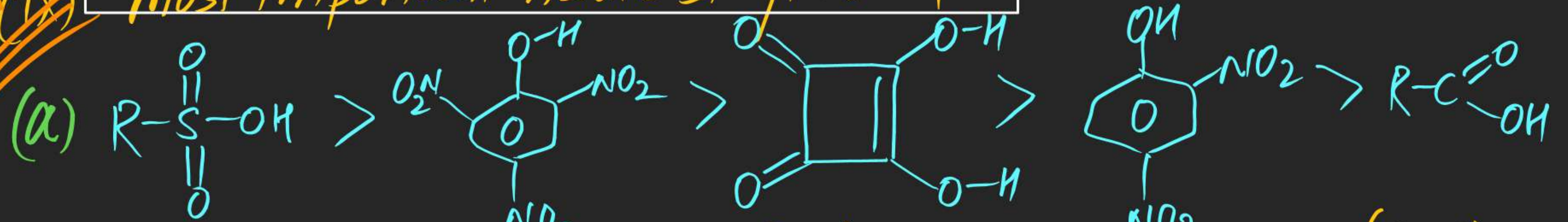


$$K_b = \frac{[\text{BH}^{\oplus}]}{[\text{B}][\text{H}^{\oplus}]} \longrightarrow (ii)$$

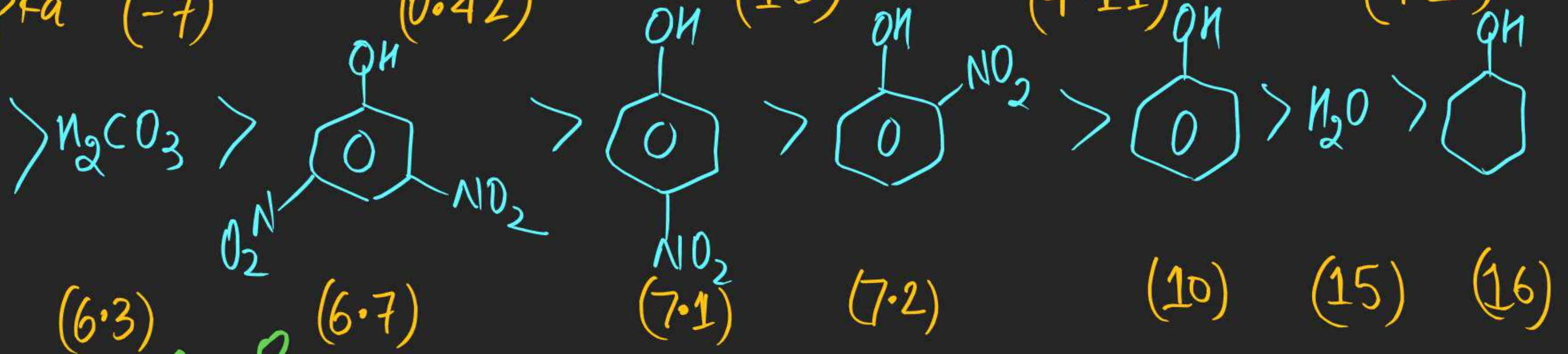
Basic strength of \ddot{B} \propto stability of BH^{\oplus}
 \propto EDG
 $\propto K_b \propto \frac{1}{pK_b}$

- (iv) A weak Acid & weak Base is relatively stable in nature.
- (v) Stronger Acid contains weaker conjugate Base & vice versa.
 unstable \longrightarrow stable
- (vi) Stronger Base contains weaker conjugate Acid & vice versa.
 unstable \longrightarrow stable
- M.I.M.P
 (vii) Each Acid Base Reaction moves towards weaker Acid / weaker Base side.
 stable / stable
- (viii) $\text{pH} = -\log[\text{H}^+]$ | $\text{pK}_a = -\log K_a$ | $\text{pK}_b = -\log K_b$

Most important Acidic strength order



pK_a (-7) (0.42) (1.5) (4.11) (4.18)



(6.3) (6.7) (7.1) (7.2) (10) (15) (16)

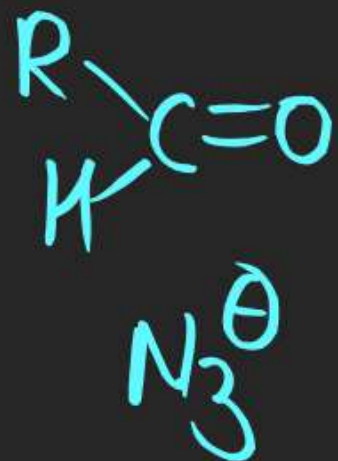


(1) Write Conjugate Base (Conjugate Base)



(2) write Conjugate Acid of following

Conjugate Acid



(3) Which of the following reaction is feasible / spontaneous / is moving in forward reaction.



HW
Sheet (X-1) (1-25),