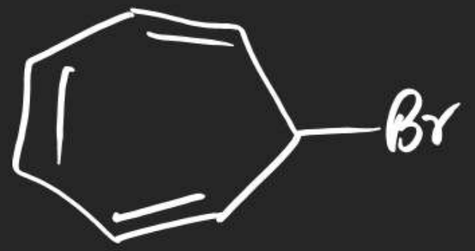
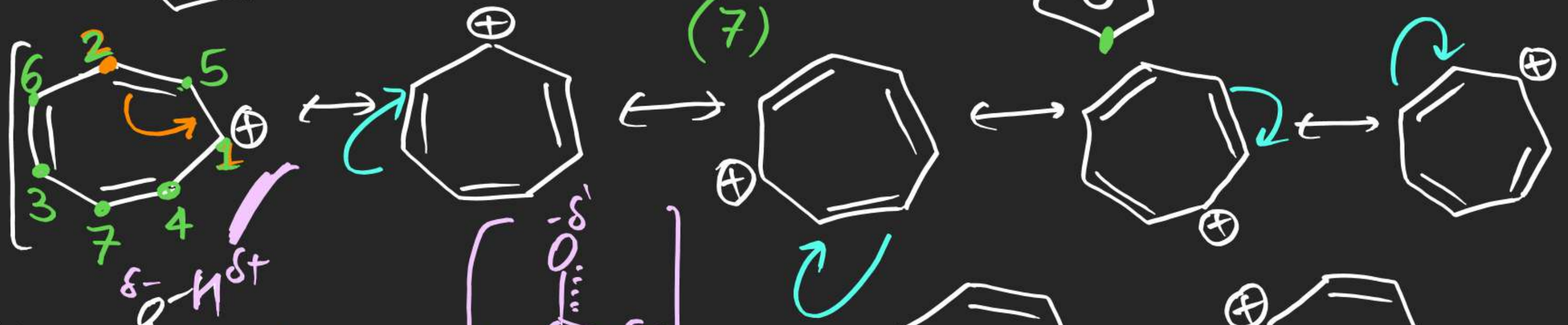
Ex-19

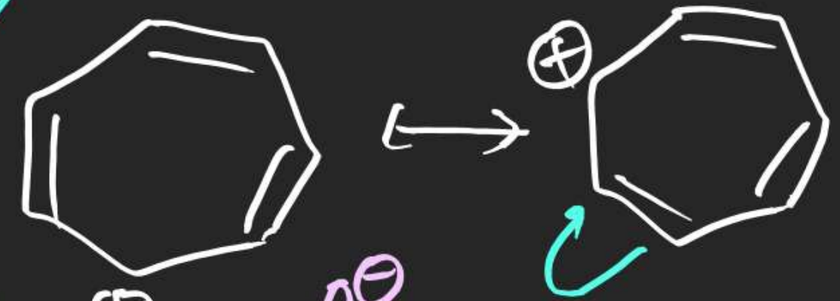


$AlBr_3$ →

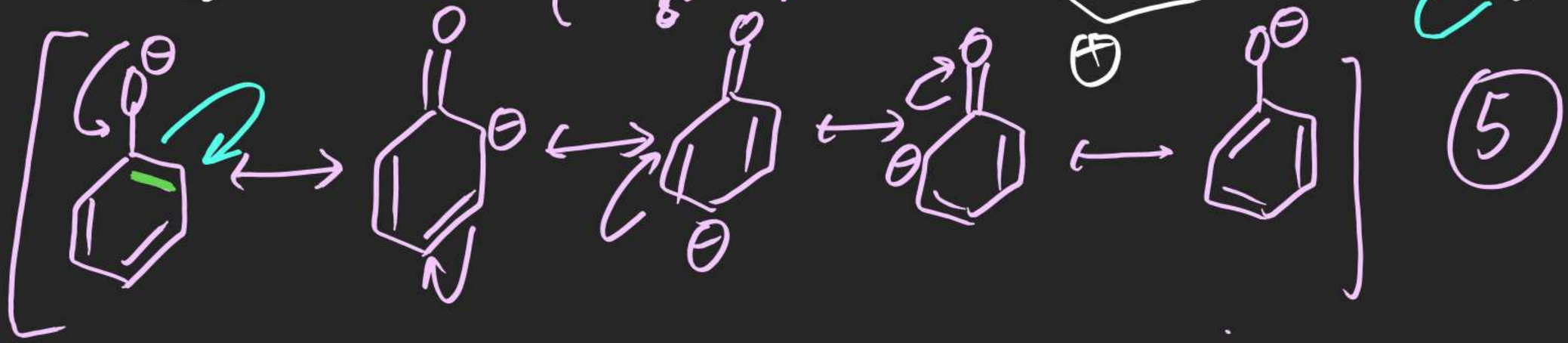
2 + 3 = 5



Ex-20:

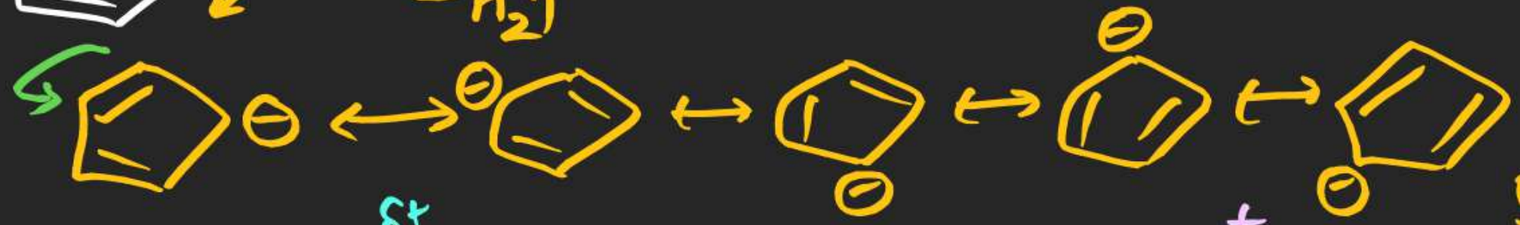


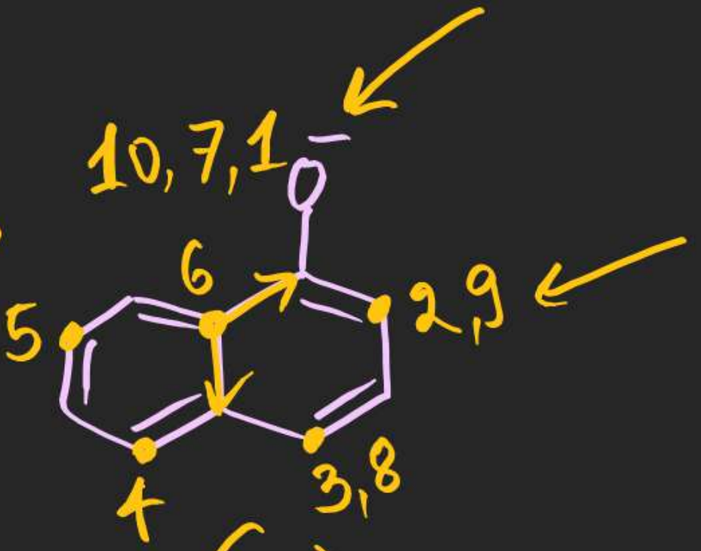
Sol:



(21)

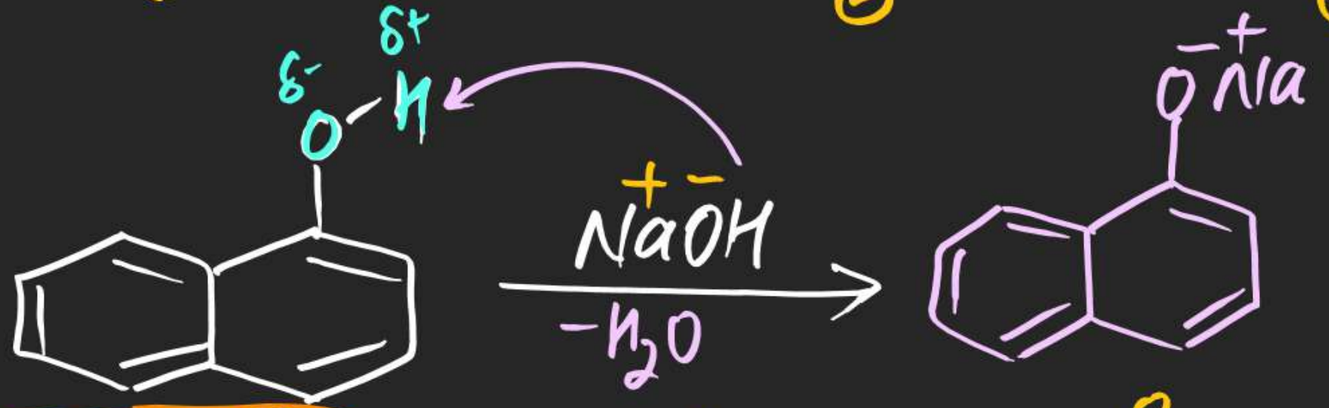
Soln:



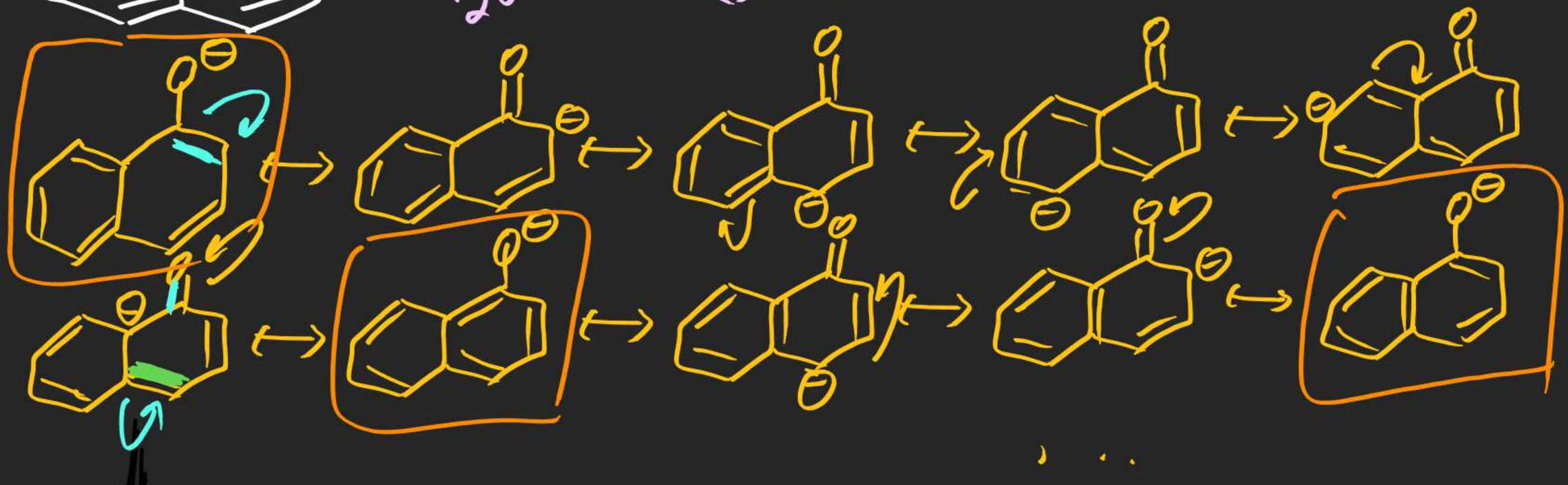


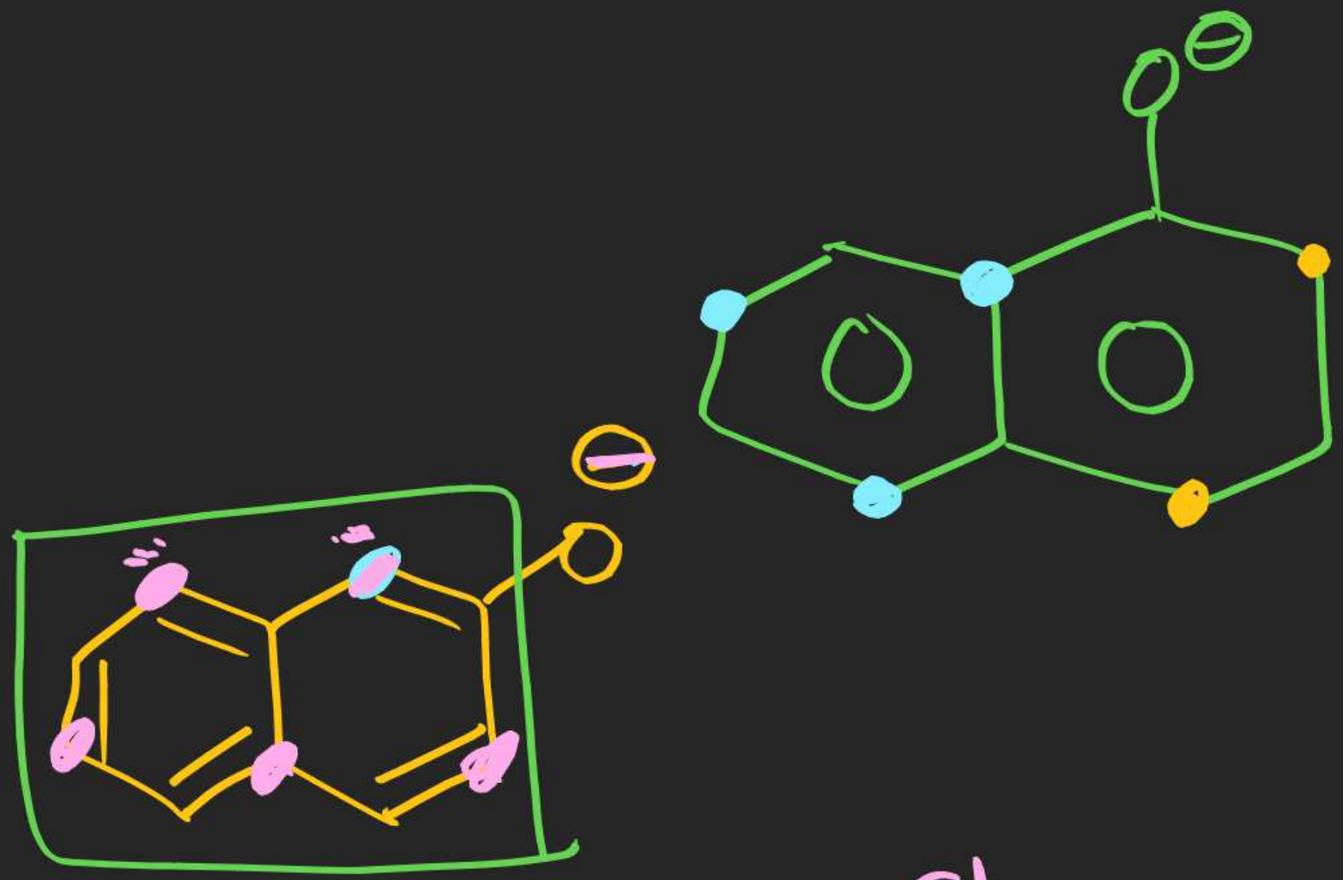
(10)

(22)



Soln:



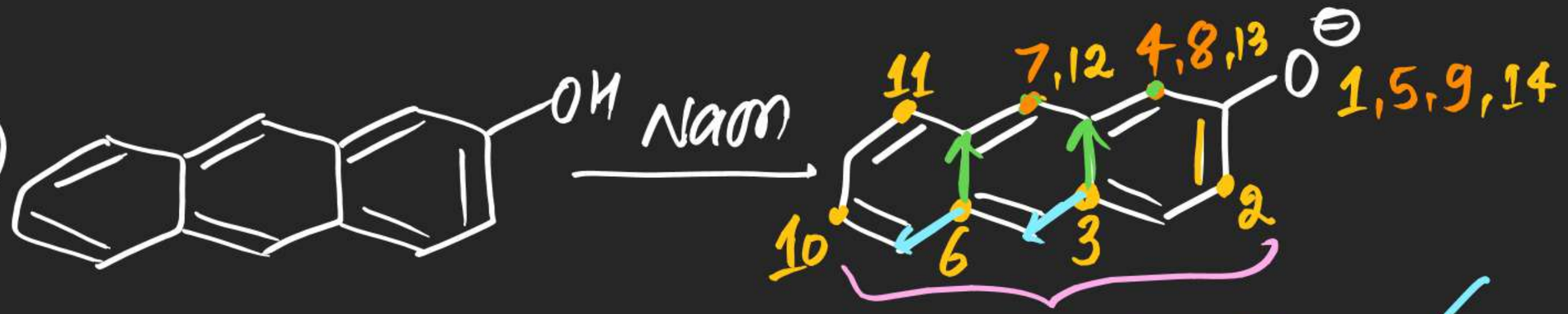


$$3+2+2$$
$$+3$$
$$10$$

$$3+2+4=9$$

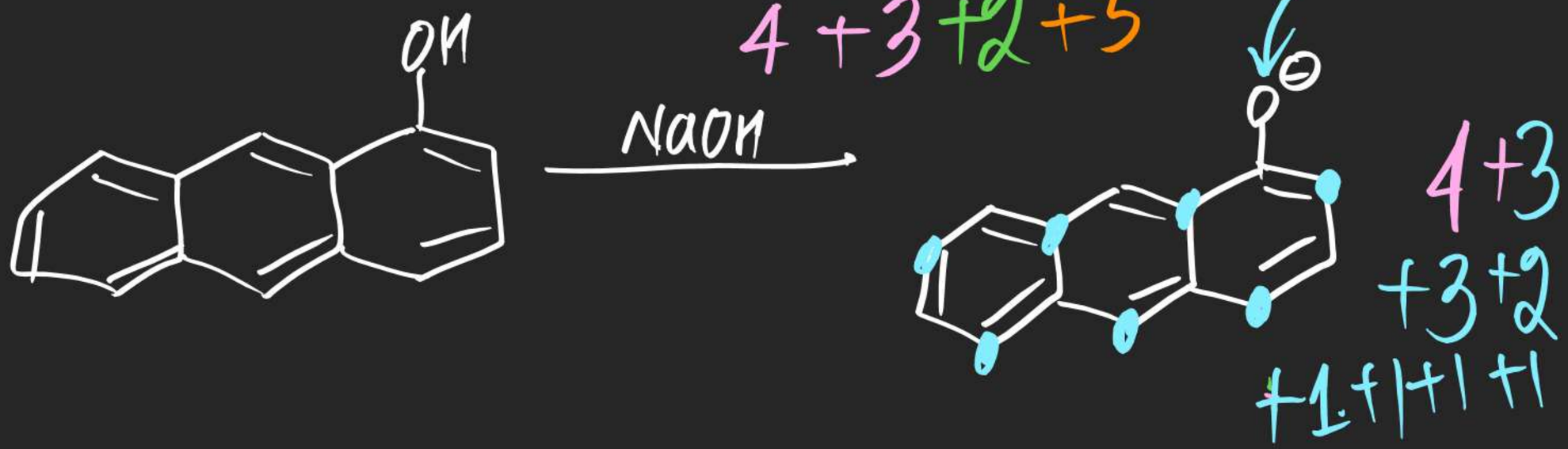
(23) 

9

(24) 

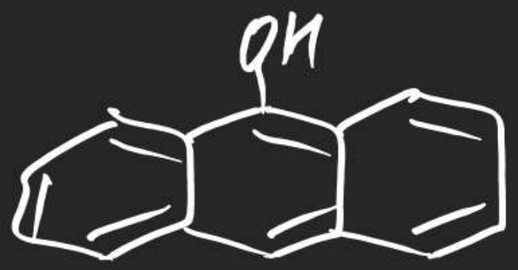
14

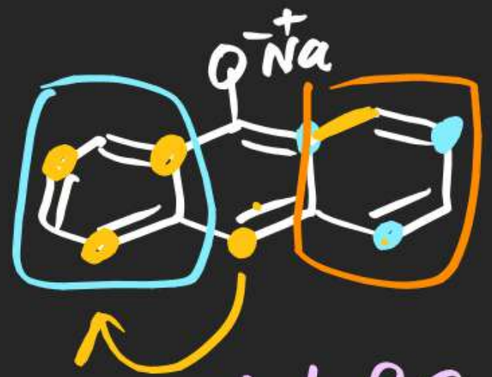
4 + 3 + 2 + 5

(25) 

16

4 + 3 + 3 + 2 + 1 + 1 + 1 + 1

(26) 

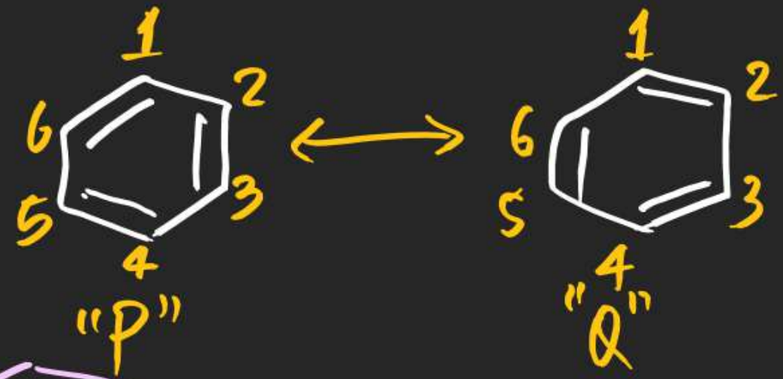


4+2+2
+2+4
+2+2+2

(20)

(#) Find total no. of Neutral Benzenoid R.S of following.

(27) Benzene 

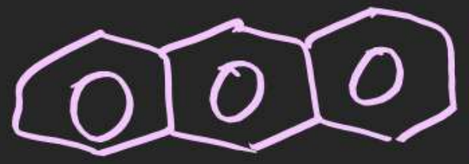


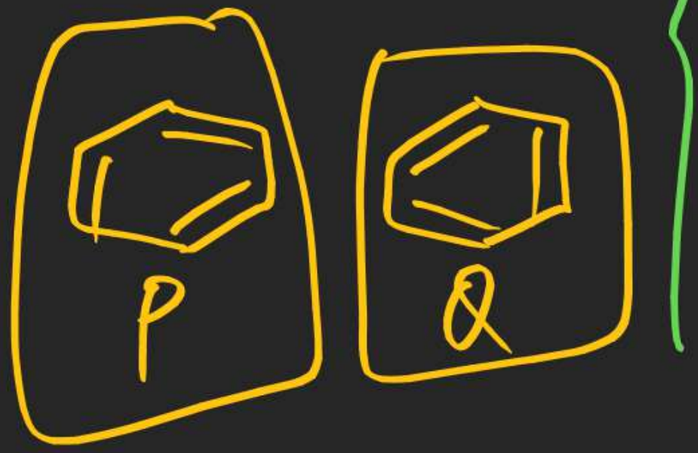
(2)

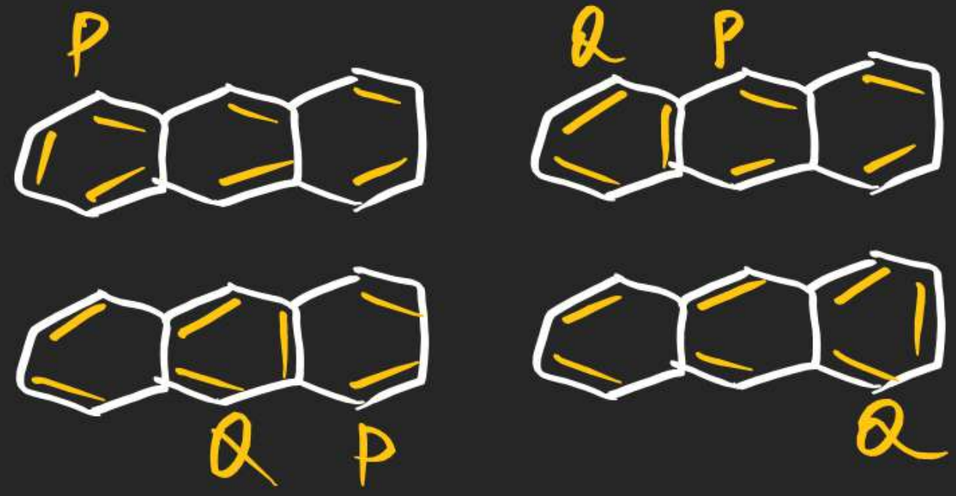
(28) Naphthlene 

(3)

(29) Anthracene

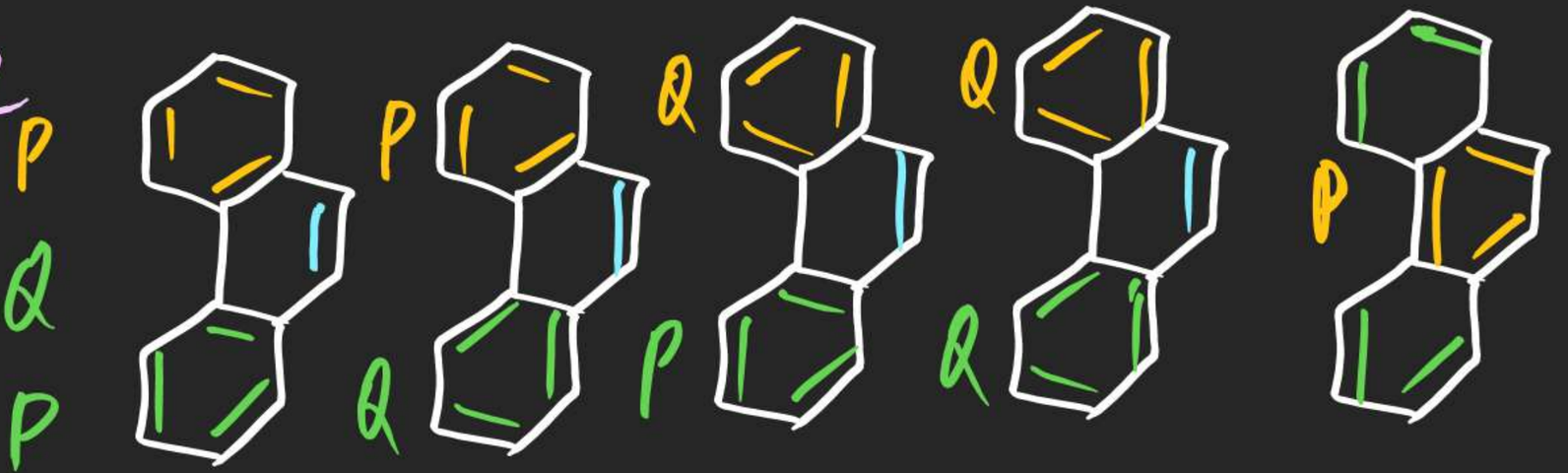






4

(30) Phenthrene

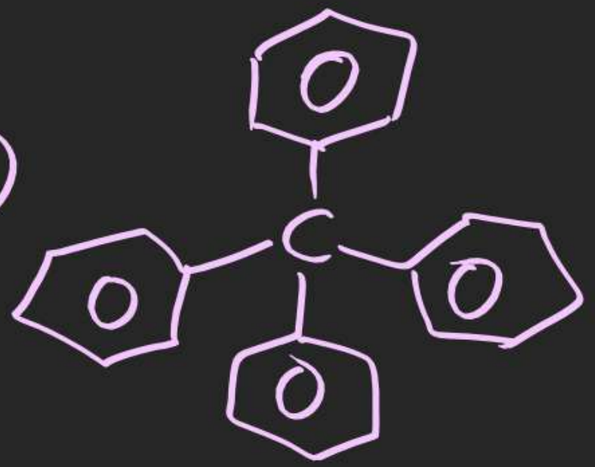


5

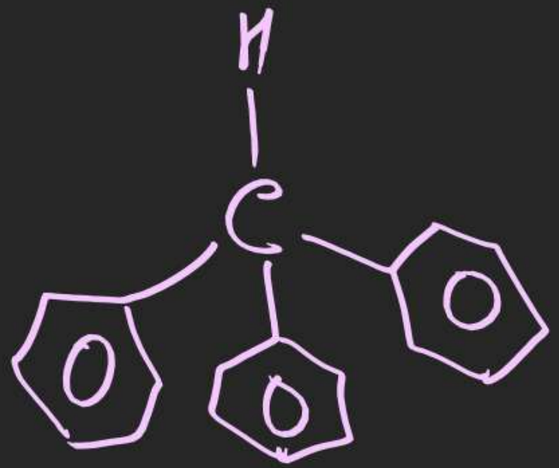
(31) 

P P
P Q
Q P
Q Q

$2^2 = 4$

(32) 

$2^4 = 16$

(33) 

$2^3 = 8$

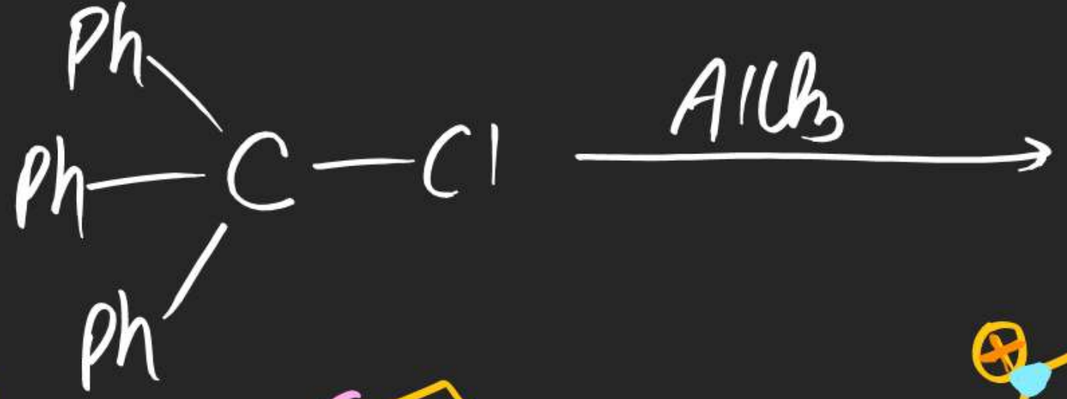
(34) 

$2^2 = 4$

(35) 

$2^1 = 2$

(36) Total no. of RS of Product of following Reaction.



$\xrightarrow{AlCl_3}$

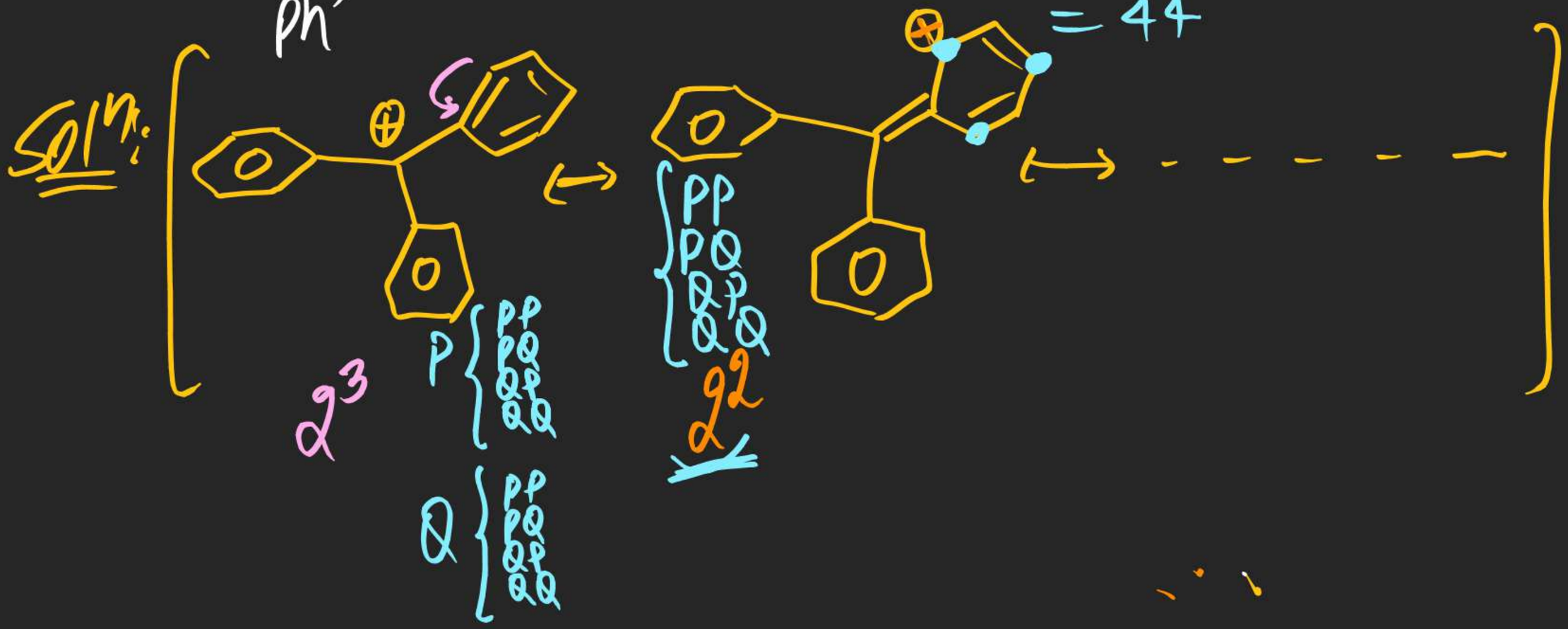
$\underline{\pm \text{in ph}}$ $\underline{\pm \text{in ph}}$ $\underline{\pm \text{in ph}}$

$[2^3 + 3\times2^2 + 3\times2^2 + 3\times2^2]$

$= 8 + 12 + 12 + 12$

$= 44$

Soln:



(#) Rules for Stability of RS :

(1) RS having Complete octet is more stable than having incomplete octet.

(1) 

II > I

(2) 

II > I

(3) 

II > I

(2) RS having higher no. of Covalent Bond or less chrge is more stable.

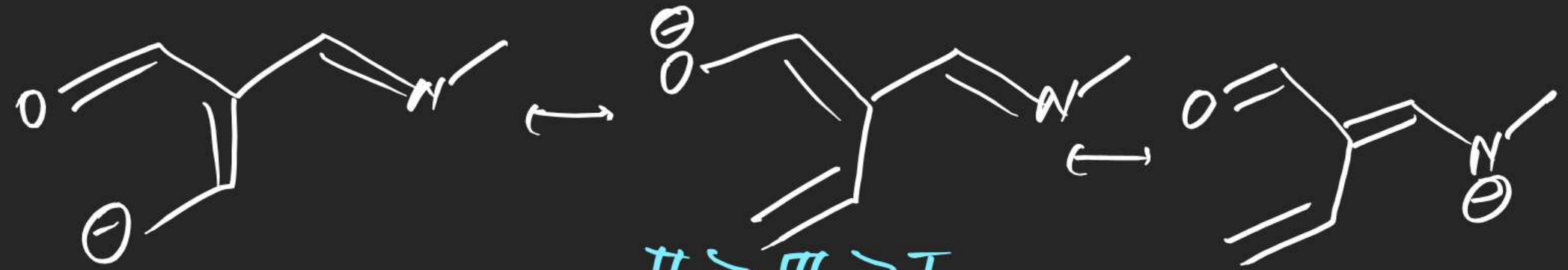
(4)  (I > II)

(5)  (I > II)

(3) RS having (−)ve chrge on Electronegative atom & (+)ve chrge on electropositive atom are relatively more stable.

(6)  (II > I)

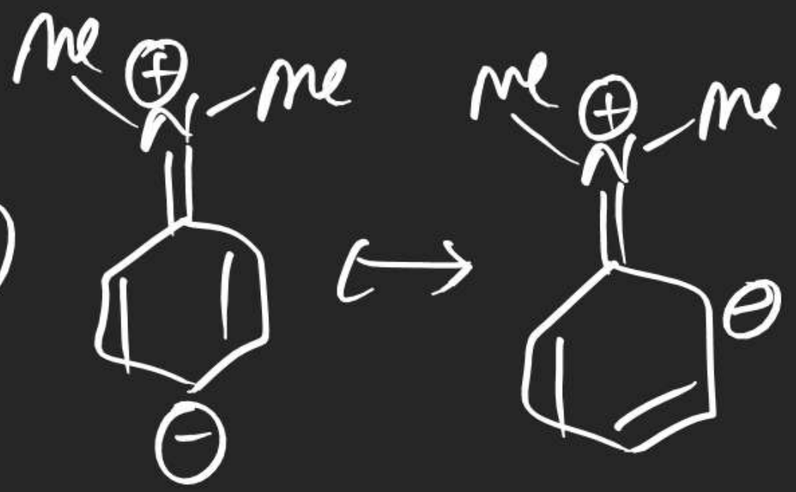
(7)



II > III > I

(4) RS having opp. charges closer & like charges away are more stable.

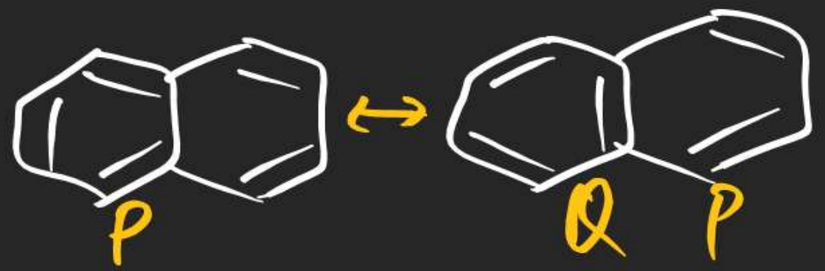
(8)



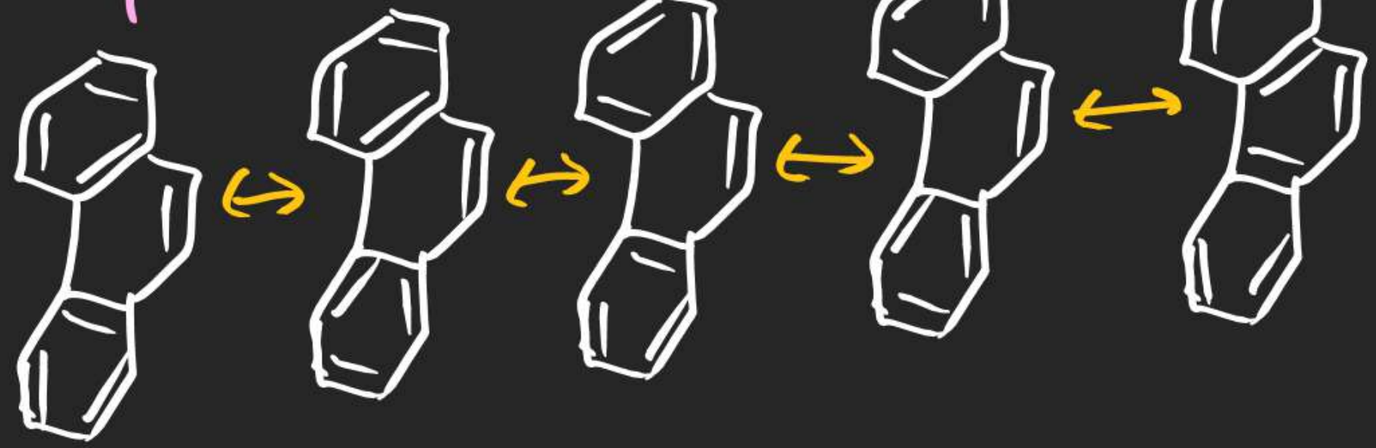
II > I

(5) RS having higher no. of Benzenoid segment is more stable.

(9)  (I = II)

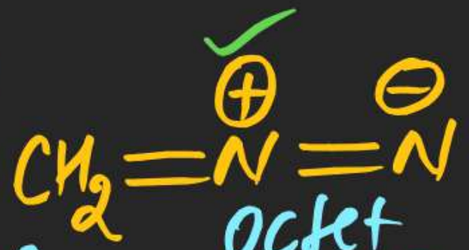
(10)   [II > I = III]

(11)  (II = III > I = IV)

(12) 

IIT Adv

(13)

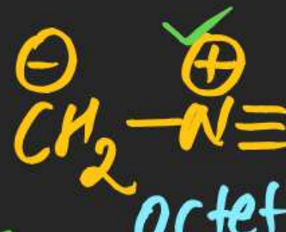


Octet Comp

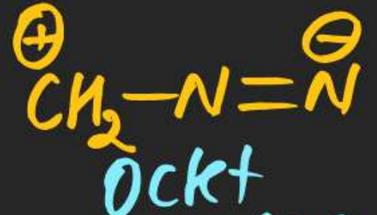
Rule-1 ✓

Rule-2 ✗

Rule-3 ✓



Octet Comp



Octet Incomp

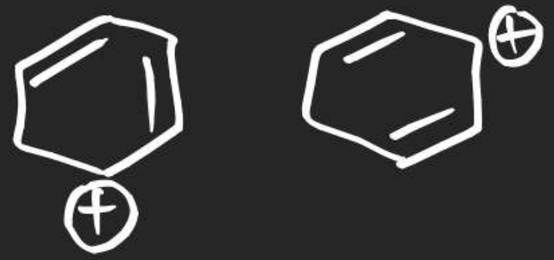
Octet Incomple

Rule-2 ✗

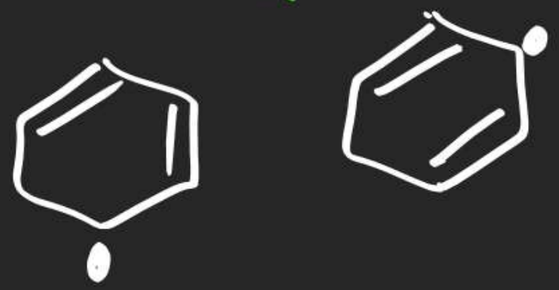
Rule-3 ✓

I > II > III > IV

(14)

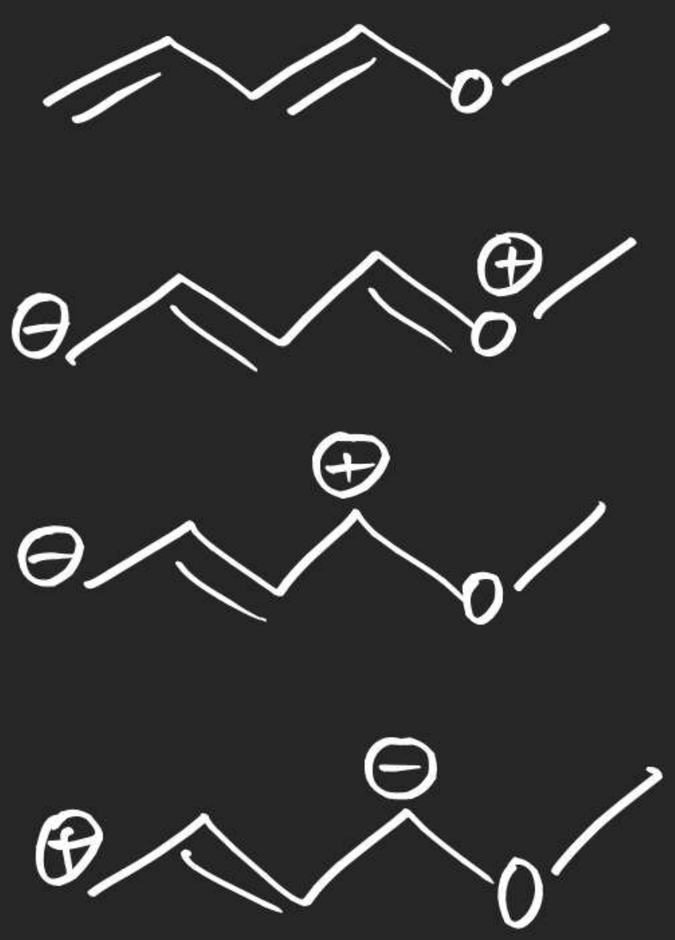


(15)



(16)

(17)



Resonance / Mesomeric Effect :-