Degree of Unsaturation - II

Course on Nomenclature of Organic Compounds for Class XI

SURENDRA K MISHRA • Lesson 3 • June 19, 2021

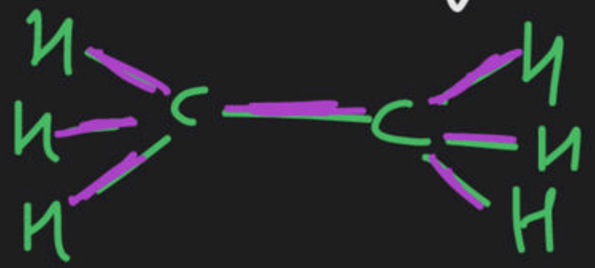
σ & π Bond

(*) A — B → Single bond → 1σ → Single bond

(*) A = B → pi bond → 1π; → sigma bond → 1σ → Double bond

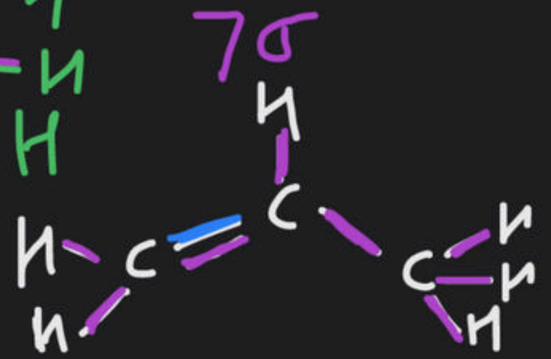
(*) A ≡ B → pi bond → 2π; → Sigma bond → 1σ → Triple bond

EX-1:



EX-2:

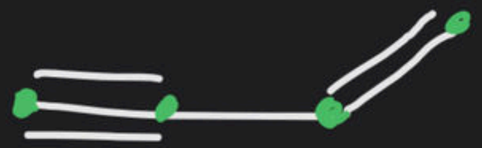
⇒



7σ

(8σ 1π)

EX-3:



(A) 6σ 2π

(B) 6σ 3π

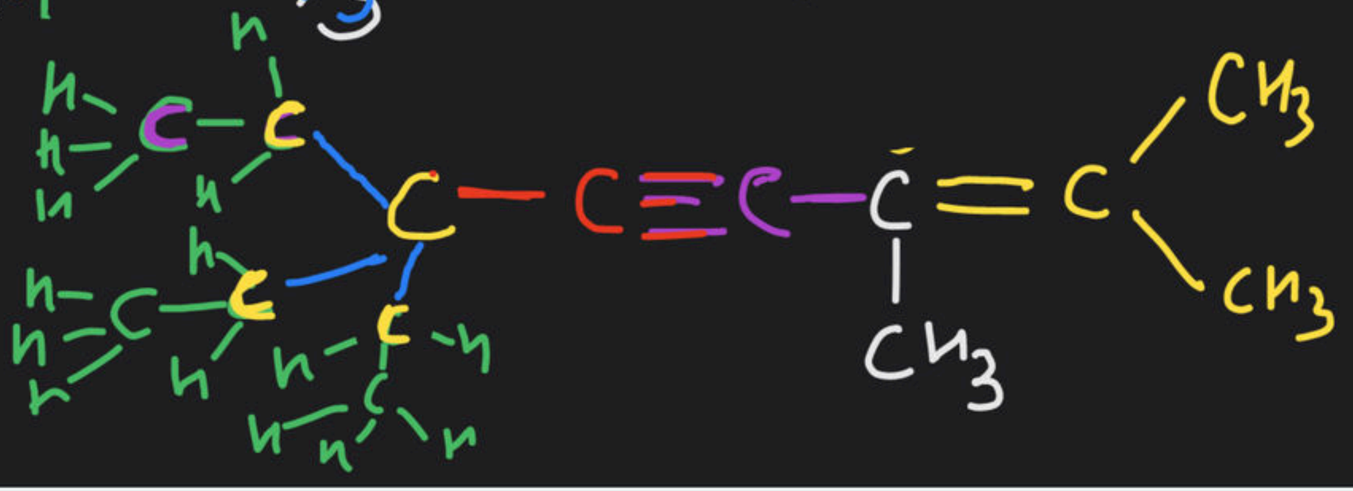
(C) 7σ 3π

(D) 5σ 3π

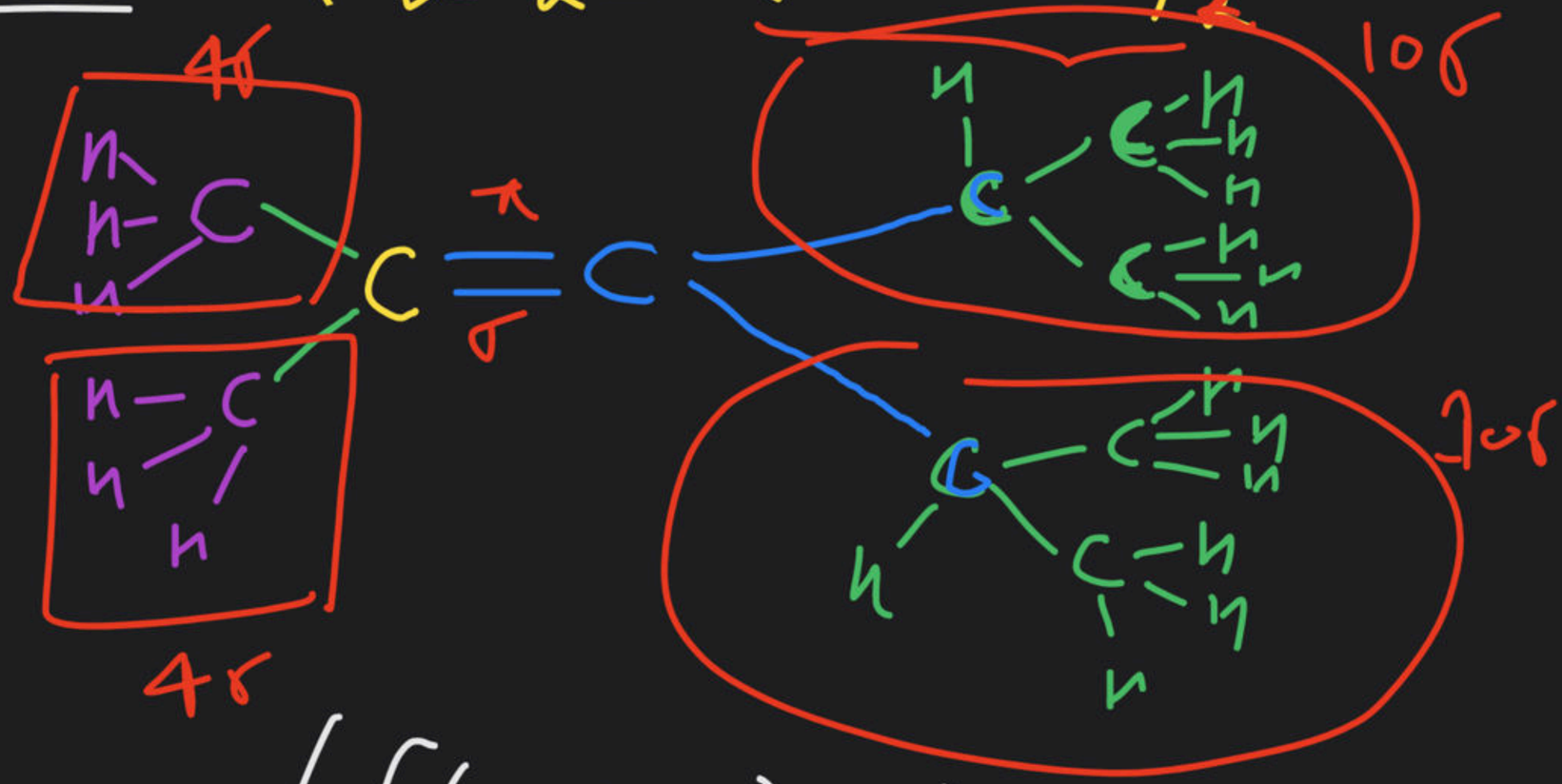
(E) 7σ 2π

EX-4: $(CH_3CH_2)_3CCCC(CH_3)C(CH_3)_2$ (37σ, 3π)

Soln:



Ex-5: $(H_3C)_2C=C(CH(CH_3)_2)_2$



(A) 25 σ 1 π

(B) 27 σ 1 π

(C) 29 σ 1 π

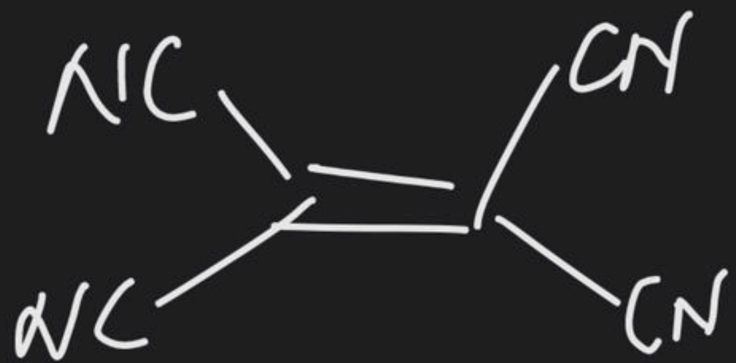
(D) 28 σ 1 π

(E) NOT

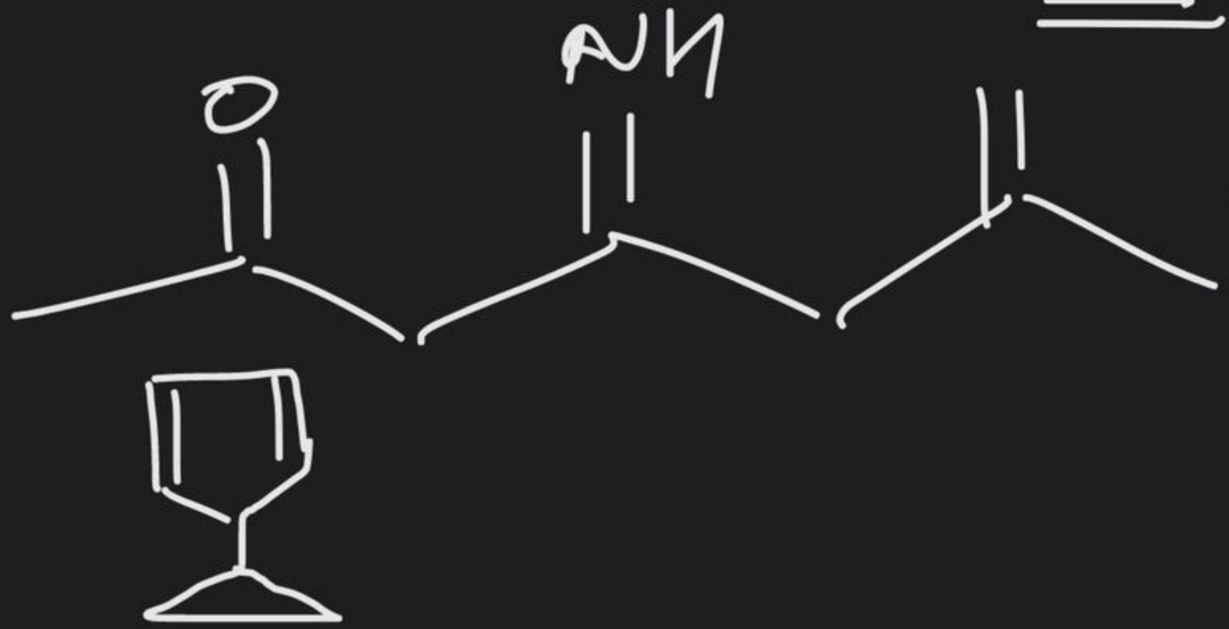
Ex-6 $\left(\left(\left(CH_3\right)_3C\right)_3C\right)_3CCH_3$

Ex-7:- $(CH_3CC)_3CCCCH_3$

Ex-8 :-



Ex-9 :-

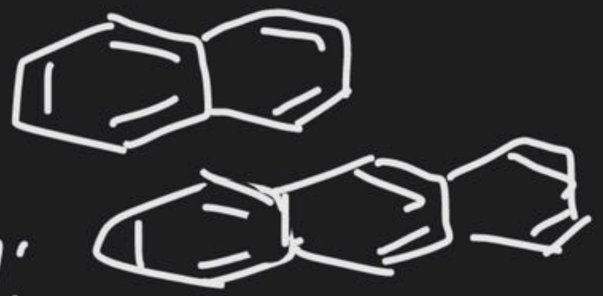


Ex-10

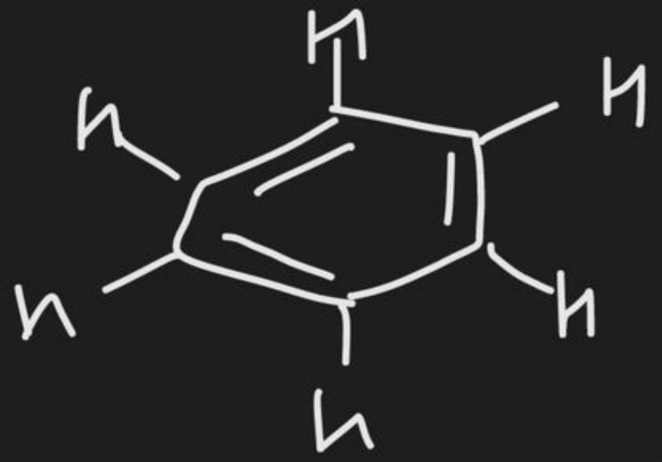
Ex-11 :-

Ex-12 :- $(H_3C)_2CCCCC(CH_3)_2$

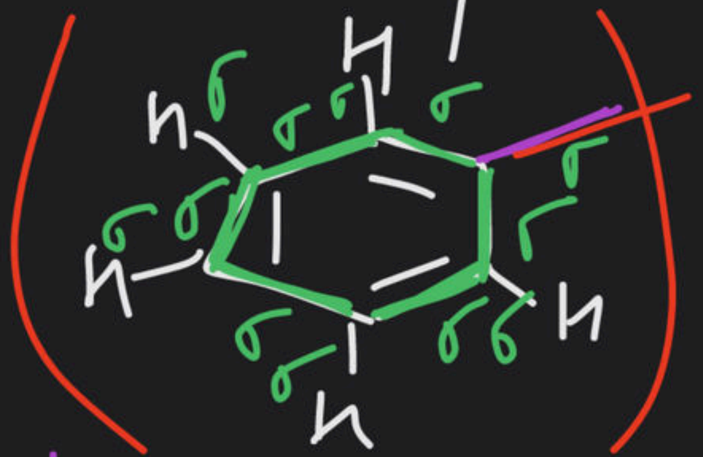
Ex-13 :-



Ex-14 :-



C_6H_6 | Ph-H |

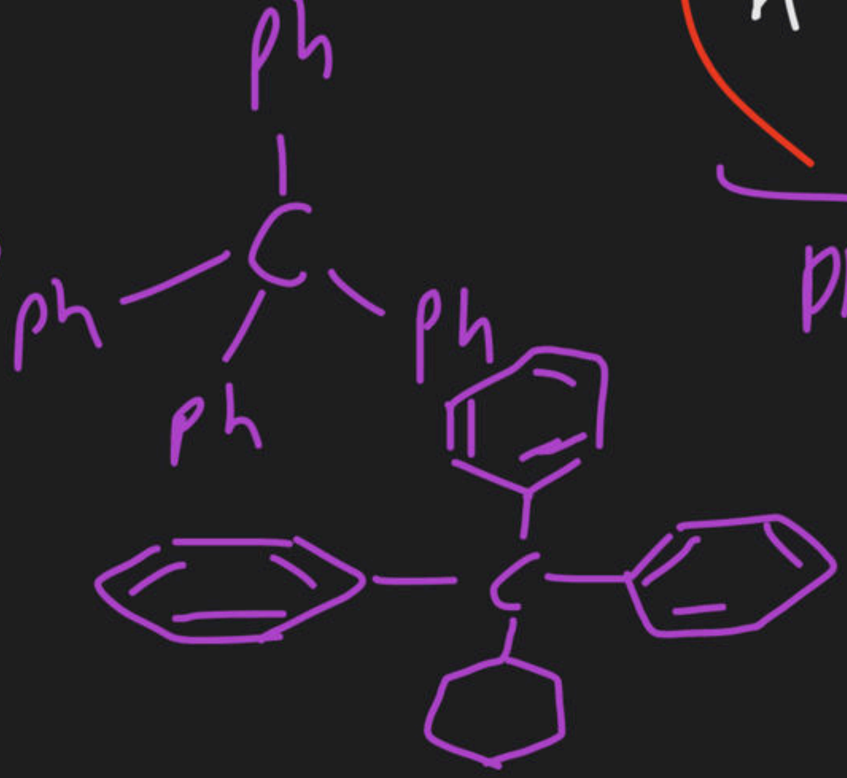


Ph ⇒ C_6H_5

Phenyl (Ph)

Ex-1:-

Ph_4C ⇒



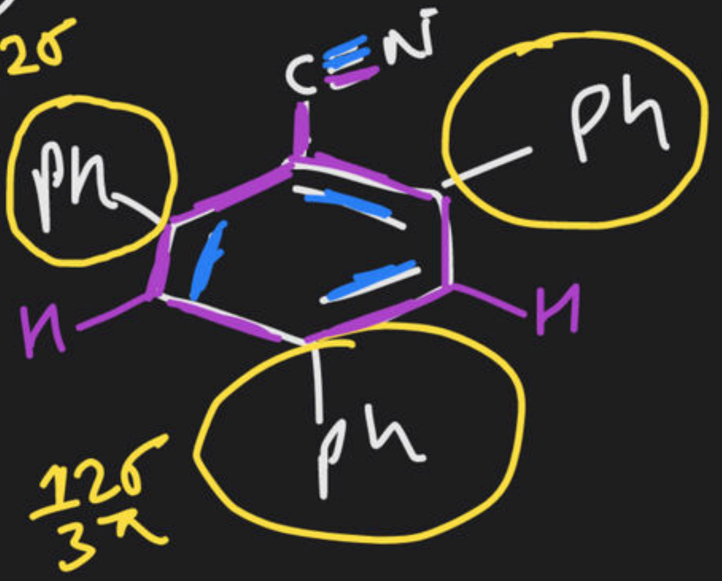
(16) Ph_3CH

(17) Ph_2CH_2

(18) $Ph-CH_3$

(19) $Ph-CH_2-Ph$

(20)



$36 + 6 + 3 + 1$

$= 46\sigma$

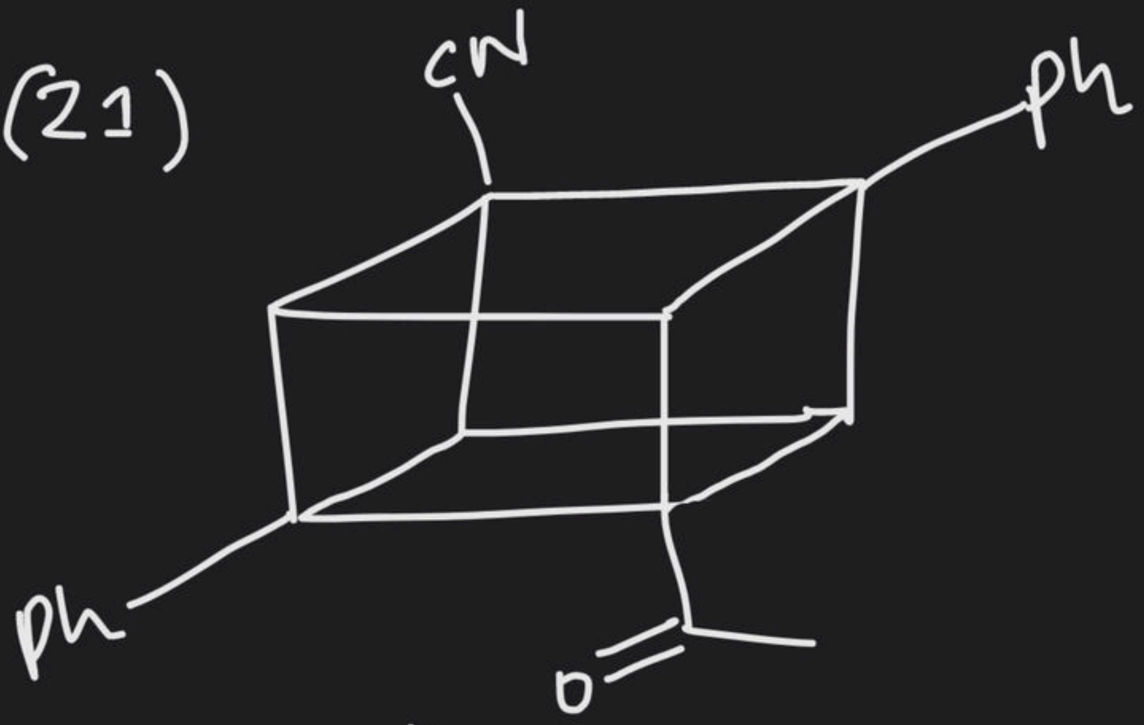
1π

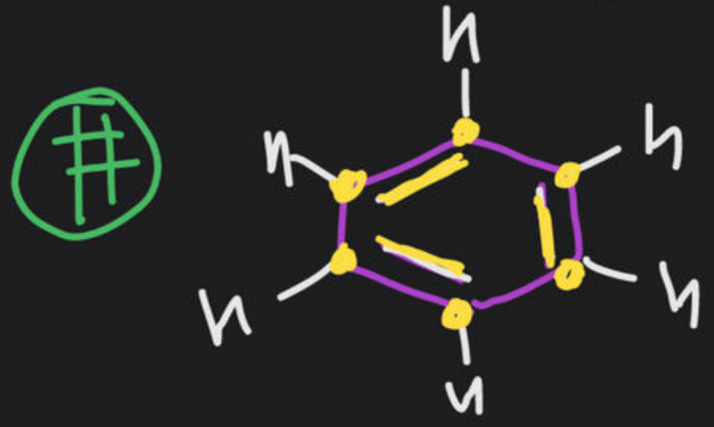
(A) $46\sigma, 1\pi$

(B) $42\sigma, 12\pi$

(C) NOT

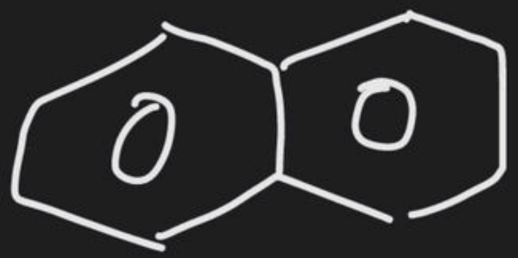
(21)



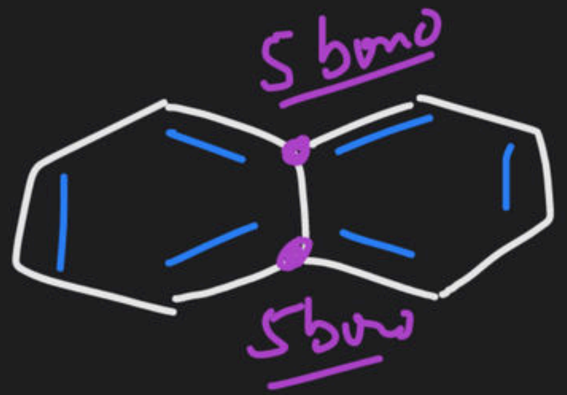


$\Rightarrow$  $\Rightarrow$ Each C atom of Ring must be doubly bonded.

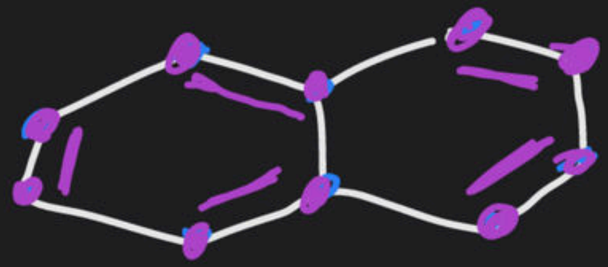
(22)



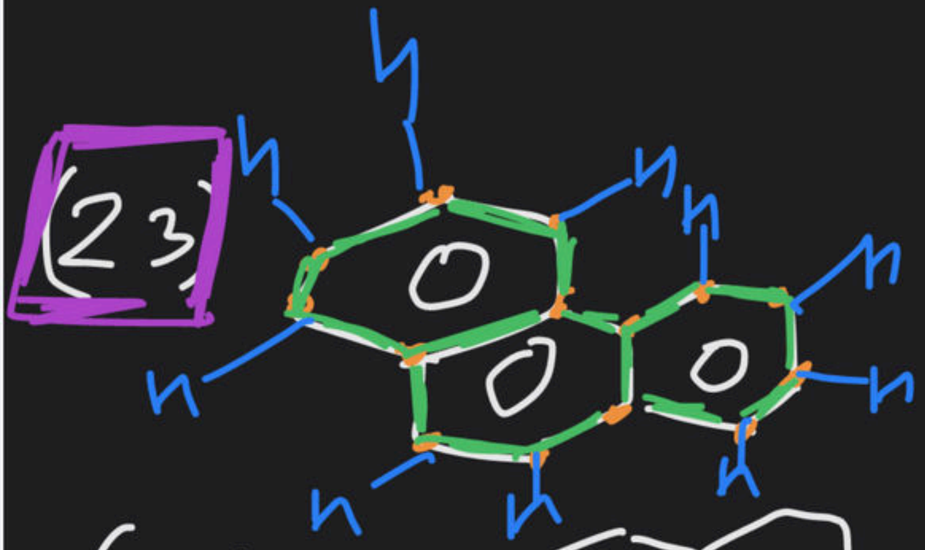
Dash



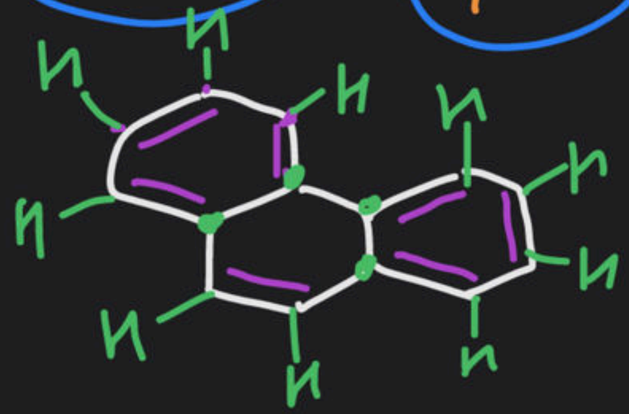
ये हो सकते हैं नहीं हो सकते



(23)

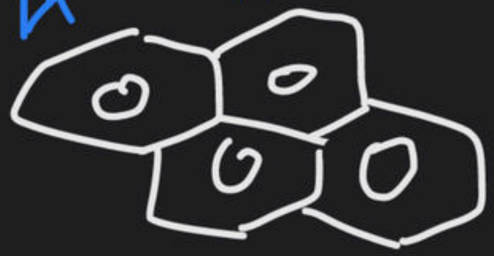


26 σ & 7 π

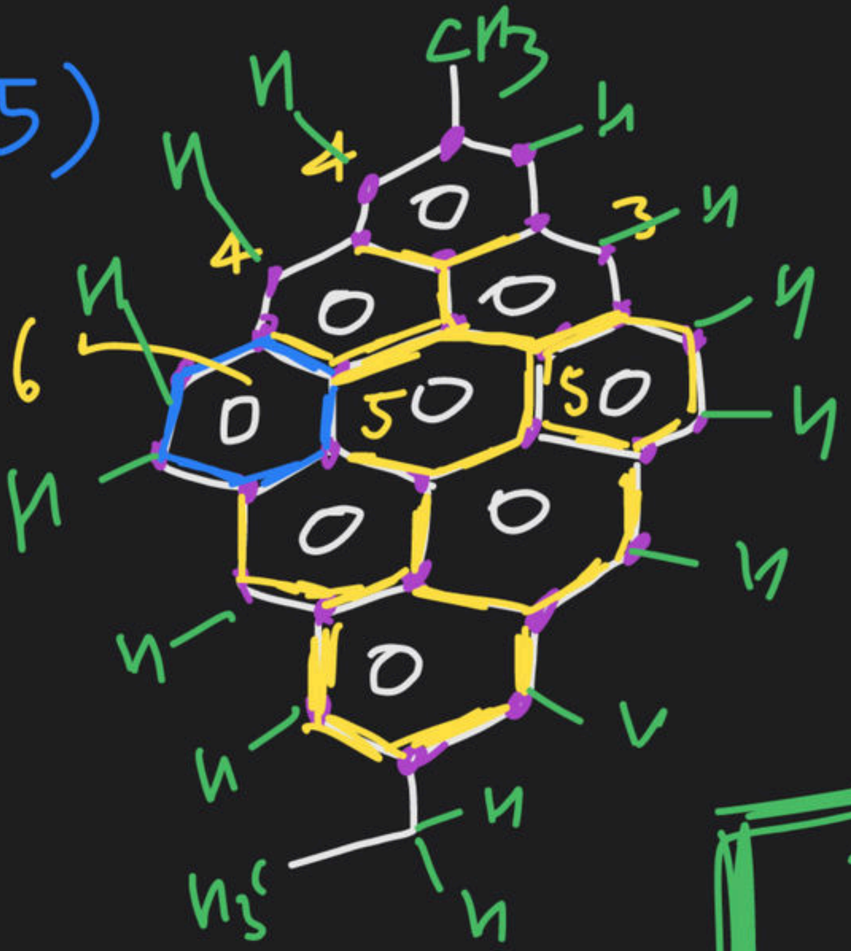


(A) 16 σ 7 π
(B) 26 σ 7 π
(C) NOT

(24)



(25)



DBE

(A) 51σ 15π

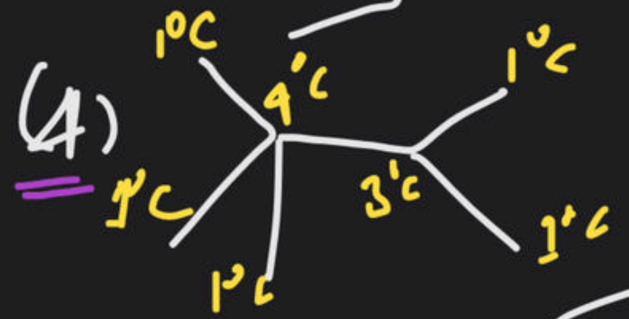
(B) 55σ 15π

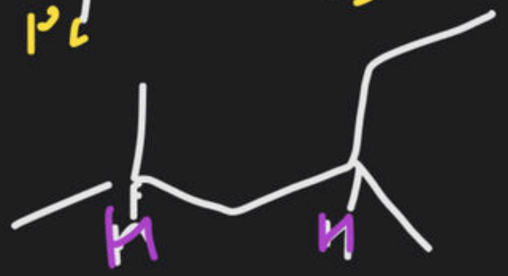
(C) 58σ 16π

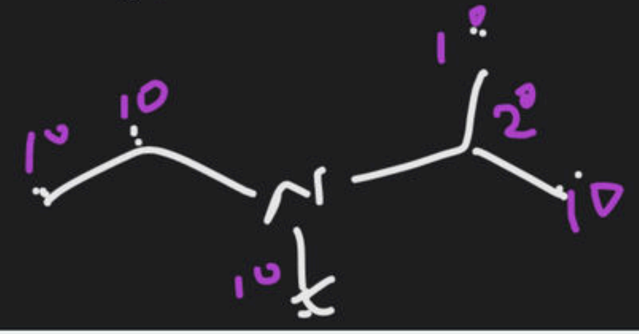
(D) 61σ 15π

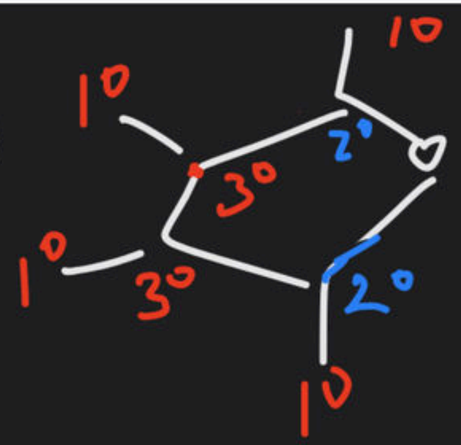
(E) N.O.T

4°C	3°C	2°C	1°C	3°H	2°H	1°H
(3)						
0	1	3	3	1	6	9
(4)						
1	1	0	5	1	0	15
(5)						
0	2	2	4	2	4	12
(6)						
0	0	0	4	0	0	10
(7)						
0	0	1	5	0	1	14





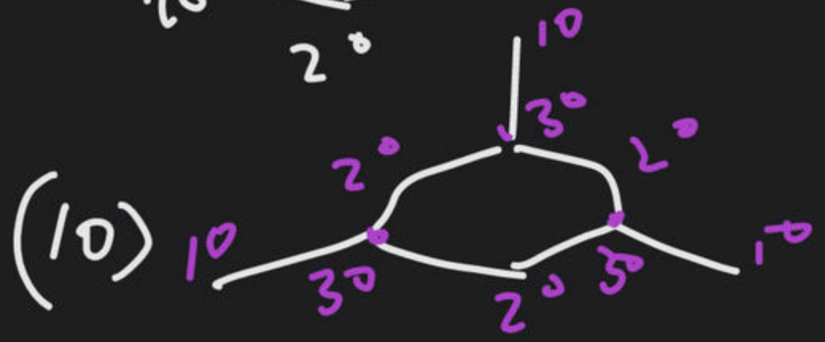


(8) 

0 2 2 4 2 2 12

(9) 

0 0 6 0 0 6 0

(10) 

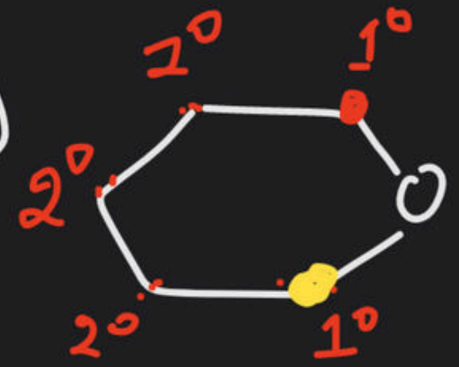
0 3 3 3 3 6 9

(11)

(12) 

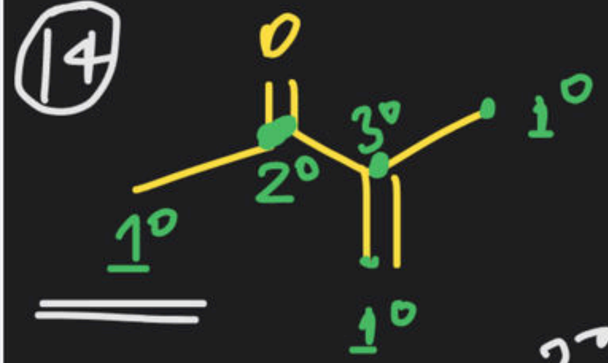
0 1 4 1 1 8 3

(13)



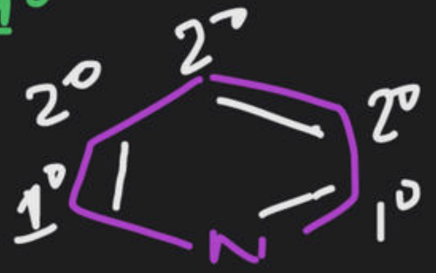
0 0 3 2 0 6 4

(14)



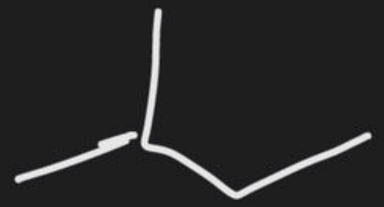
0 1 1 3 0 6 8

(15)



0 0 3 2 0 3 2

(19)



C_5H_{13}