Types of Carbon and Hydrogen, Degree of Unsaturation - I

Course on Nomenclature of Organic Compounds for Class XI

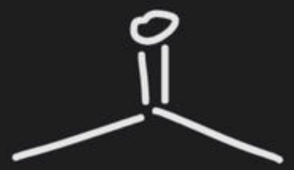
SURENDRA K MISHRA • Lesson 2 • June 17, 2021

(1)

(2) 

(3) 

(4) 

(6) 

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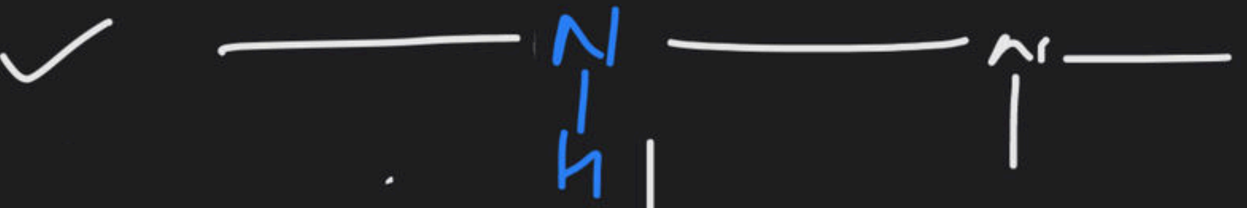
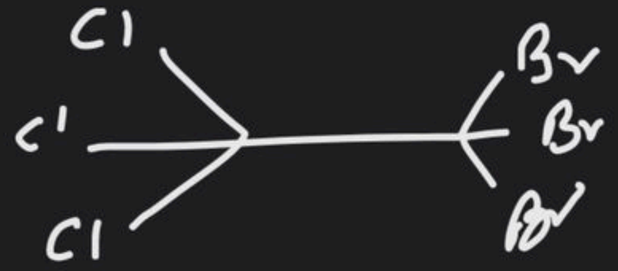
(10) 

(11) 

(12)  or 

(13)  or 

(14) 

(16) Cl atom

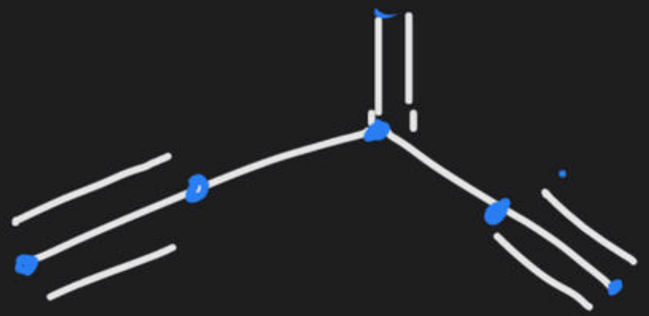
(17) "

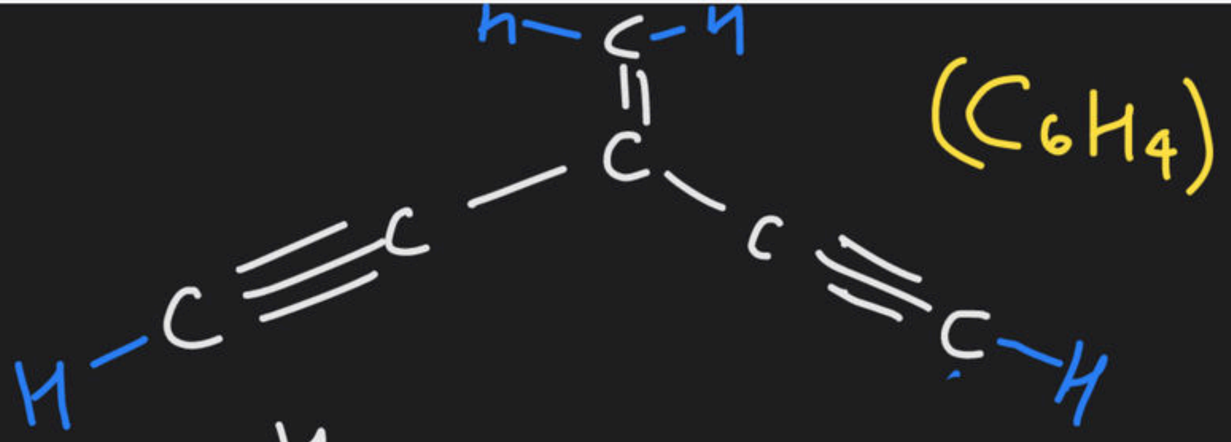
(18) "

(2)

CH_3-CH_2-Cl

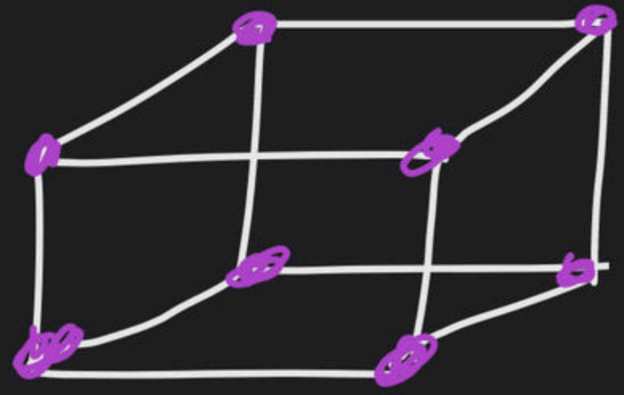
(19)

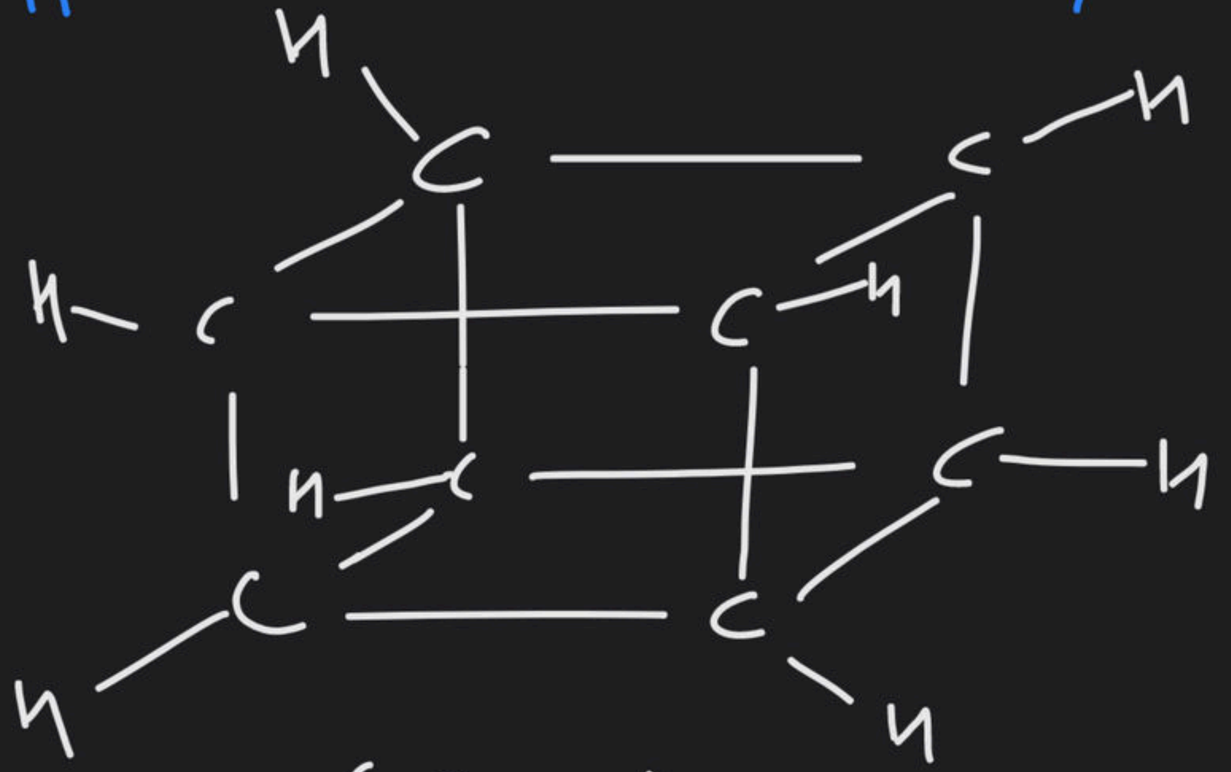




(C_6H_4)

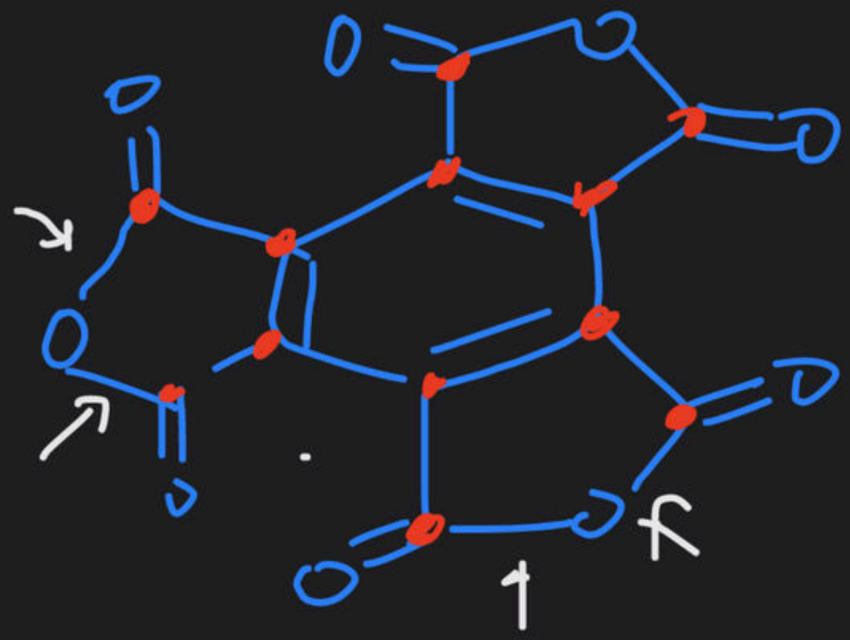
(20)

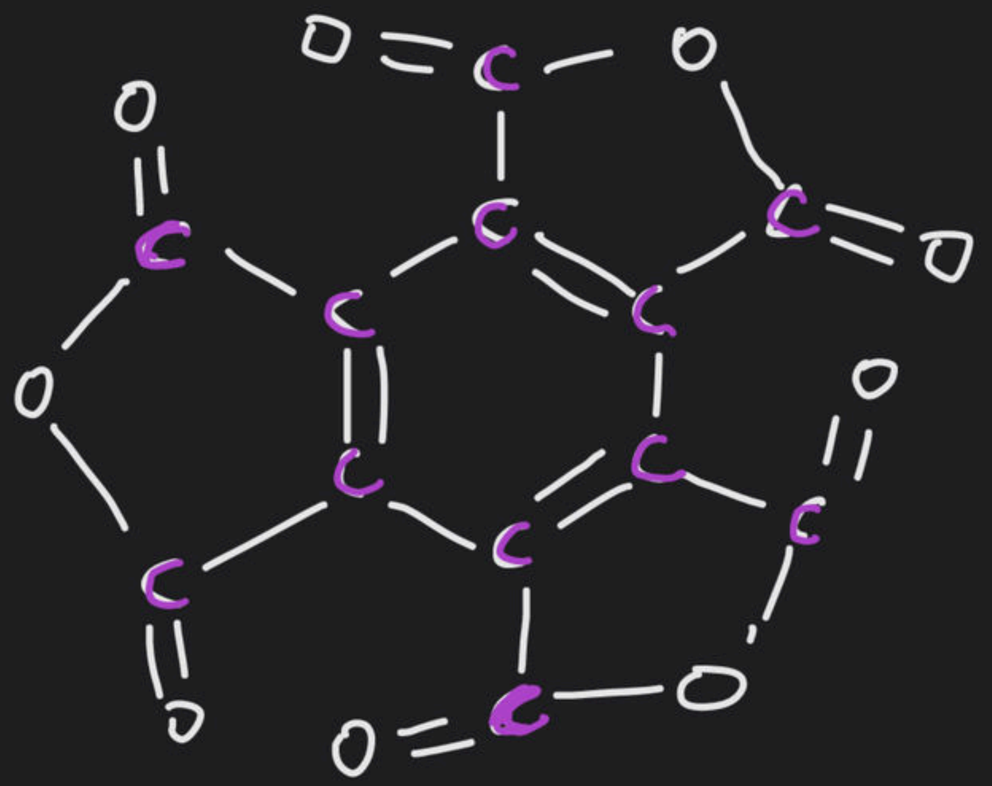




(C_8H_8)

(21)





$C_{12}O_9$

(#) Types of Carbon

There are basically four type of Carbon

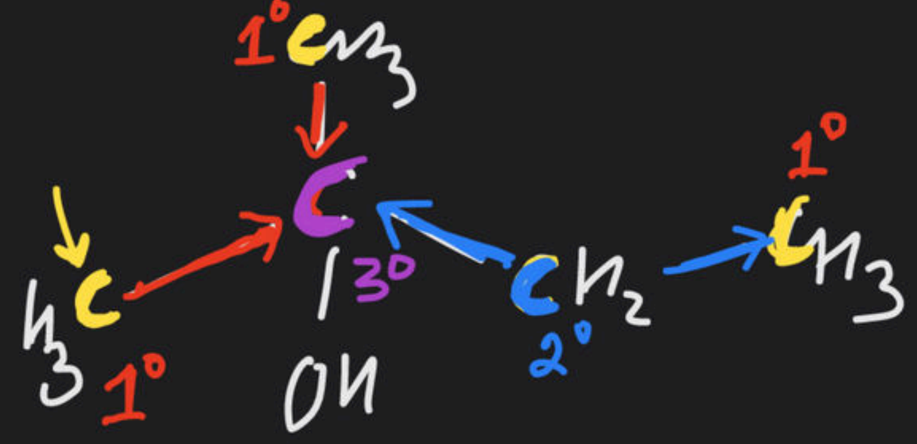
(1) 1° Carbon / Primary Carbon — Carbon atom which is directly attached with one/none Carbon atom then that Carbon atom is known as 1° carbon.

(2) 2° Carbon / Secondary Carbon

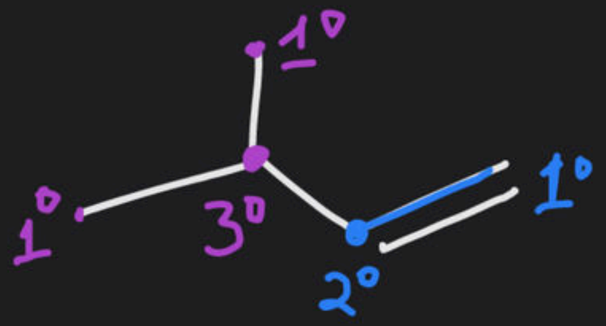
(3) 3° Carbon / tertiary Carbon

(4) 4° Carbon / Quatnary Carbon — Carbon atom which is directly attached with 4 Carbon atom.

Ex-1 :-

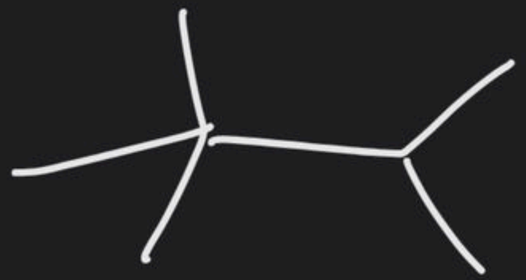


Ex-2 :-



Ex-3 :

(4)



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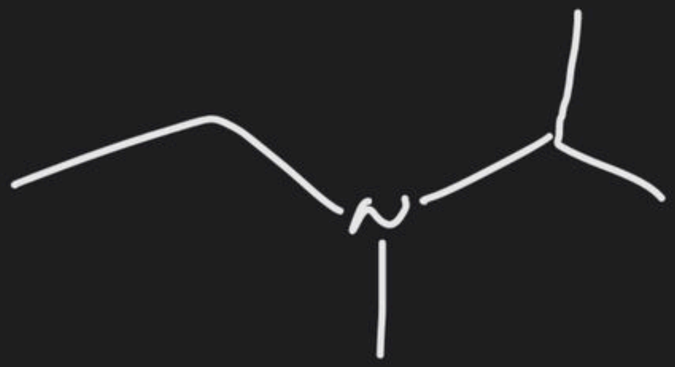

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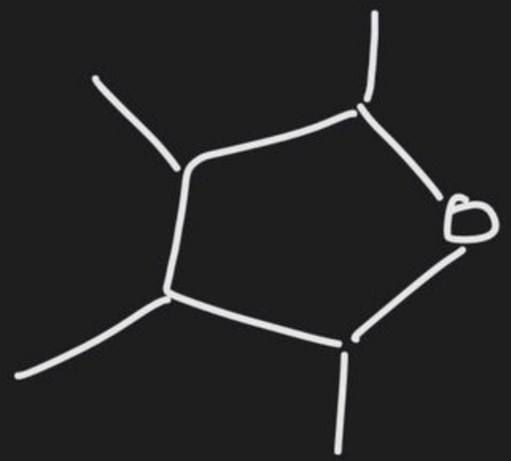

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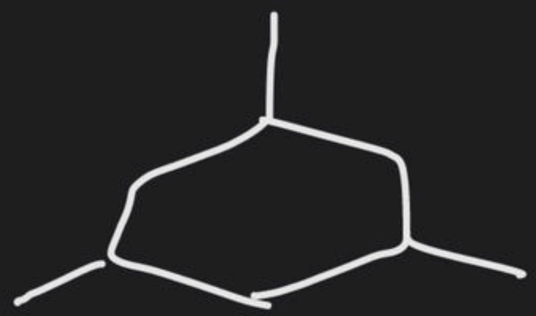


(#) **Type of Hydrogen**

(i) **1° Hydrogen**: H atom presented at 1° Carbon is known as 1° Hydrogen.

(ii) **2° Hydrogen**: H ——— ——— — 2° ——— — — .
— 2° ———

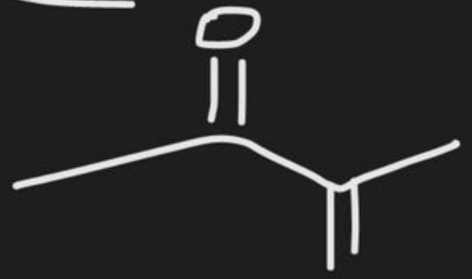
(iii) **3° Hydrogen**: H ——— ——— — 3° ——— ———
— 3° ——— —

(11) $H_3C-CH_2-CH_3$

1° 2° 1°

(12) 

(13) 

(14) 

(15) 

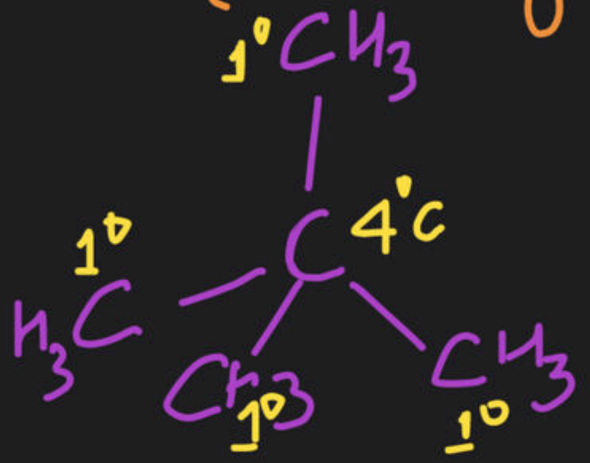
4°C	3°C	2°C	1°C	3°H	2°H	1°H
0	0	1	2	0	2	6

Draw Compound having lowest mol. wt & Formula C_nH_{2n+2} with

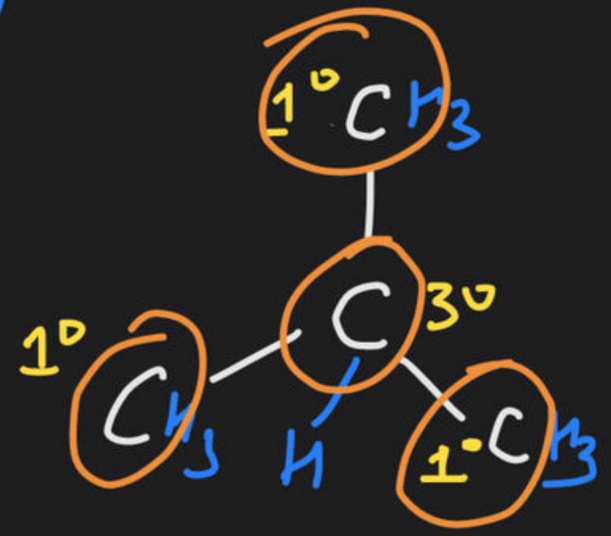
(16) only 1^0 & 4^0 Carbon

(A) CH_4
(B) C_2H_6
(C) C_4H_{10}
(D) C_5H_{12}
(E) C_6H_{14}

Soln:- C_nH_{2n+2} (All Single Bond)

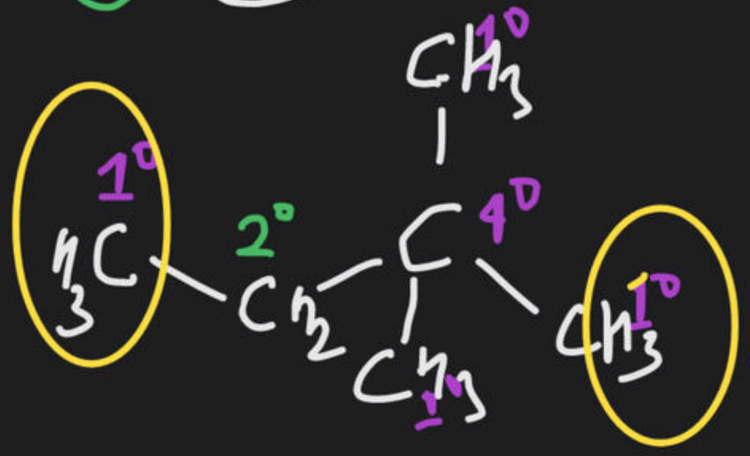


(17) Only 1° & 3° Carbon



(A) CH_4
(B) C_2H_6
(C) C_3H_8
(D) C_4H_{10}
(E) C_5H_{12}

(18) Only 1°, 2°, 4° Carbon



(A) C_3H_8
(B) C_4H_{10}
(C) C_5H_{12}
(D) C_6H_{14}
(E) C_7H_{16}

(19) Only 1°, 2° & 3° Carbon

1° 3° 4° 2° 1°

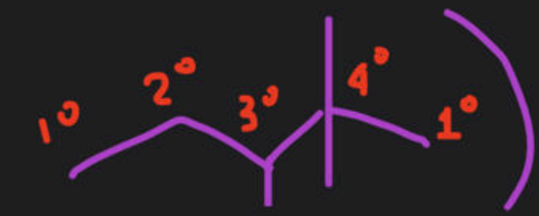
(20) All 1°, 2°, 3° & 4°

$\Rightarrow C_8H_{18}$

15

(21) Total number of such structure asked in question "20".

1° 2° 3° 4° 1°



C_8H_{18}

1° 3° 2° 4° 1°

C_8H_{18}

1° 2° 4° 3° 1°

C_8H_{18}

(22) Total no. of 1° Carbon atom in a Compound

$C_{14}H_{30}$

which is a(*) alkane (C_nH_{2n+2})

(*) mol. wt = 19.8

$m.wt = (12n+2n+2) = 14n+2$

$n = \frac{196}{14}$

(x) Contains only 1° & 4°C

$14n+2 = 198 \Rightarrow 14n = 196$

$\Rightarrow n = 14$

1°C ⟶ 3H

10C ⟶ 30H

30H ⟹ 1^0 H

$(-CH_3)$

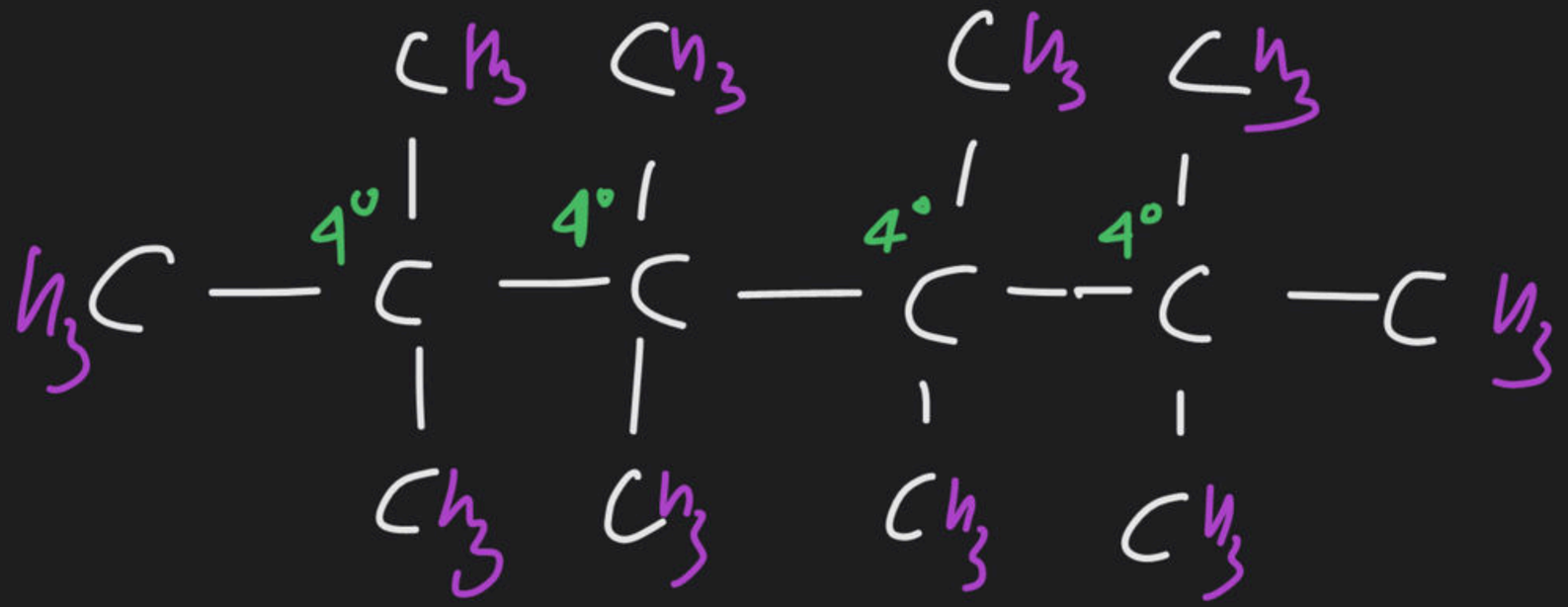
(A) 14

(B) 12

(C) 10

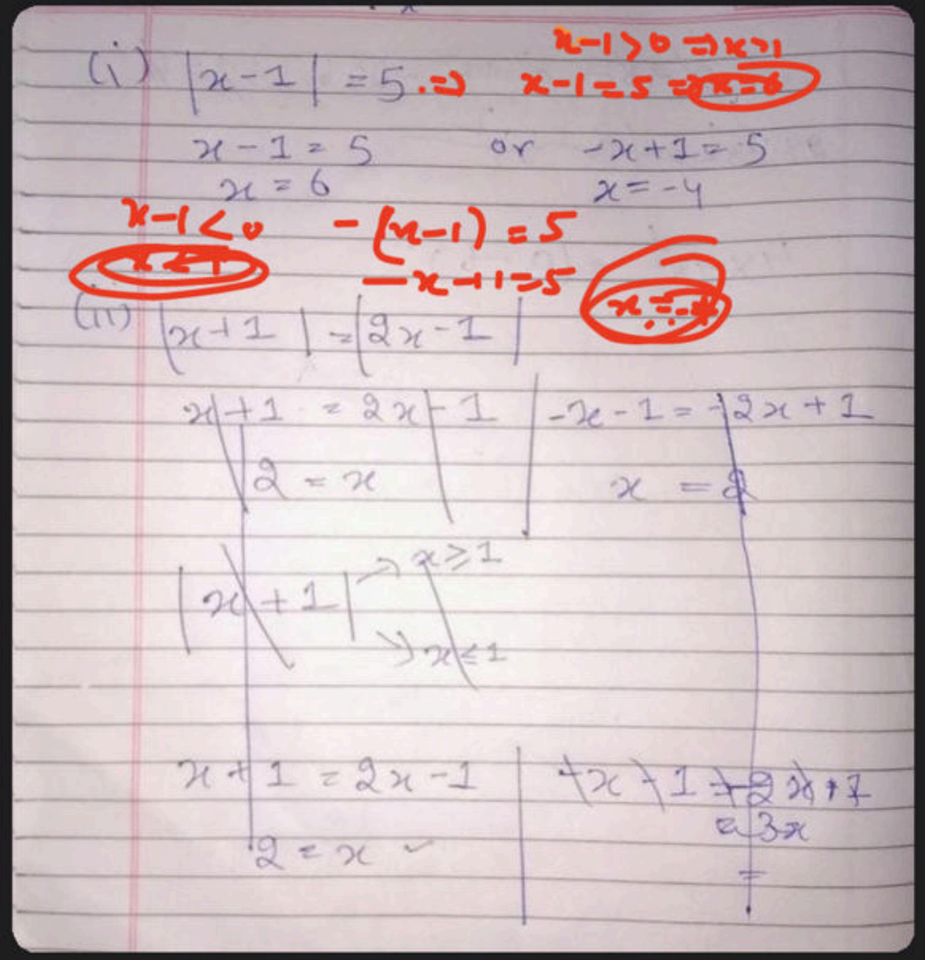
(D) 8

(E) 6


4°
4°
4°
4°

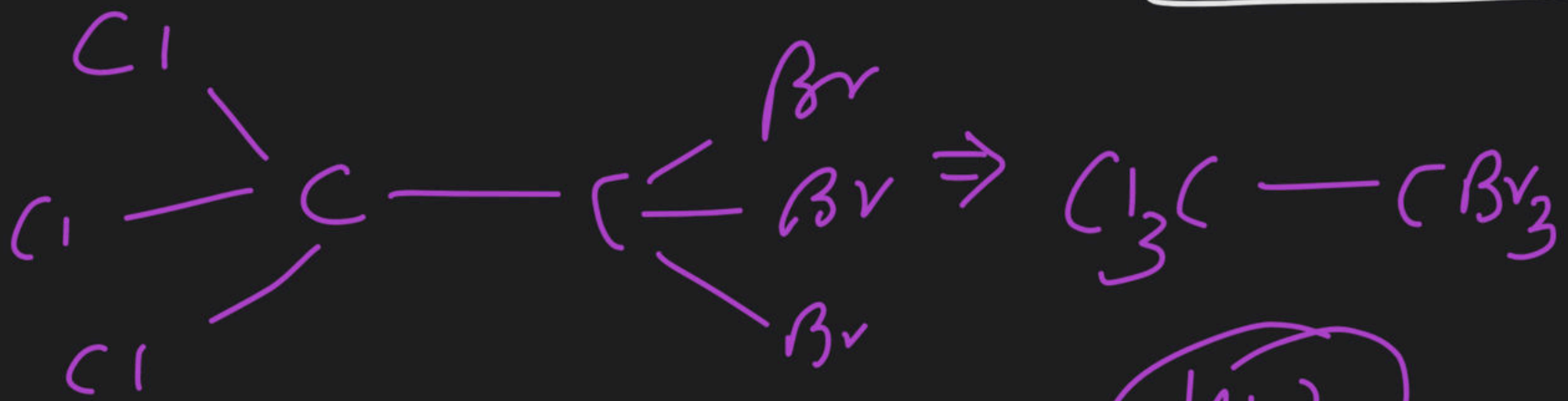
Question

from RAKSHIT SHARMA



⇒ Organic chemistry पढ़ने का सही तरीका

@SKM 121



HW

discuss