Classification of Organic Compounds

Course on Nomenclature of Organic Compounds for Class XI

SURENDRA K MISHRA • Lesson 7 • June 29, 2021

HW (discussion)

(49) 4

(50) 1

(51) $x+1$ C_xO_y / C_xH_0 / C_xH_{2x+2} / $\Delta n = (2x+2)$ / $\frac{1}{2}n) = \frac{2x+2}{2}$

C_nH_{2n+2}

$= \frac{2(x+1)}{2}$

$= (x+1)$

(52) 4

(54) $\frac{(2x+2)-y}{2}$ C_xH_y / C_nH_{2x+2} /

(55) $C_nH_{2n-4}O_m$ / C_nH_{2n-1} / C_nH_{2n+2} / $\Delta n = 6$ / 3 IHD

(56) 1

(57) 4

(60) $C_3H_7N \Rightarrow C_3H_6(NH) \Rightarrow C_3H_6 / C_3H_8 / \Delta n_{H_2} = 2 / IHD = 1$

(61) $CN_2H_4O \Rightarrow CH_2(NH)_2O / CH_2 / CH_4 / \Delta n_{H_2} = 2 / IHD = 1$

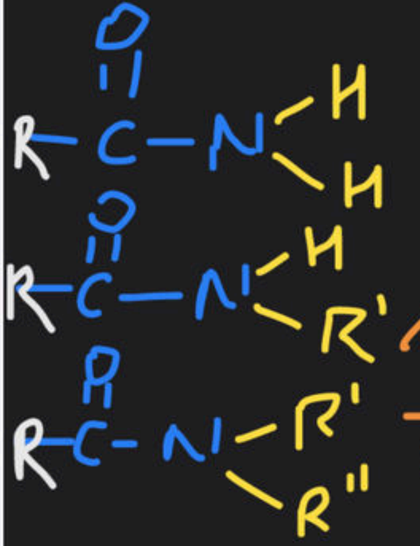
(62) $C_6H_8FN \Rightarrow C_6H_8(NH) \Rightarrow C_6H_8$ $\quad IHD = 3$

(63) $C_xH_yO_zN_p \Rightarrow C_xH_{y-p}O_z(NH)_p \Rightarrow C_xH_{y-p} / C_xH_{2x+2}$

$$IHD = \frac{(2x+2)-(y-p)}{2}$$

$$\left(\frac{2x+2+p-y}{2}\right)$$

(6) Acid Amide



primary Acid Amide

Sec. Acid Amide

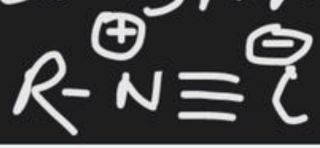
tertiary Acid Amide

$R' \neq H, R'' \neq H, R \neq H$

(7) Cyanide

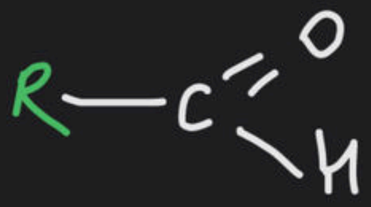
$R-C\equiv N$ (R-CN)

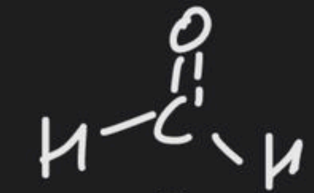
(8) iso-Cyanide

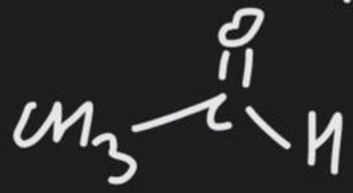


(R-NC)

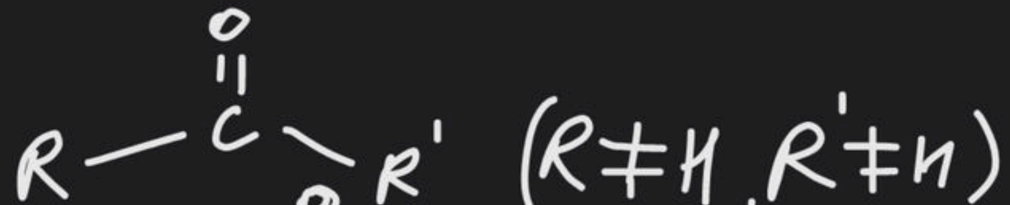
(9) Aldehyde

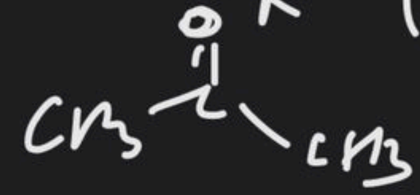


Ex:  Formaldehyde

 Acetaldehyde

(10) Ketone



Ex-1:  (Acetone)

(11) Alcohol

$R-OH$ $(R \neq H)$

Ex: (a) CH_3-OH }

(b) CH_3-CH_2-OH (Ethanol)

(a) $CH_3-OH \xrightarrow{NAD^{\oplus}} H-\overset{\overset{O}{\|}}{C}-H$

$(CH_3OH + H-\overset{\overset{O}{\|}}{C}-H)$ Formaline.

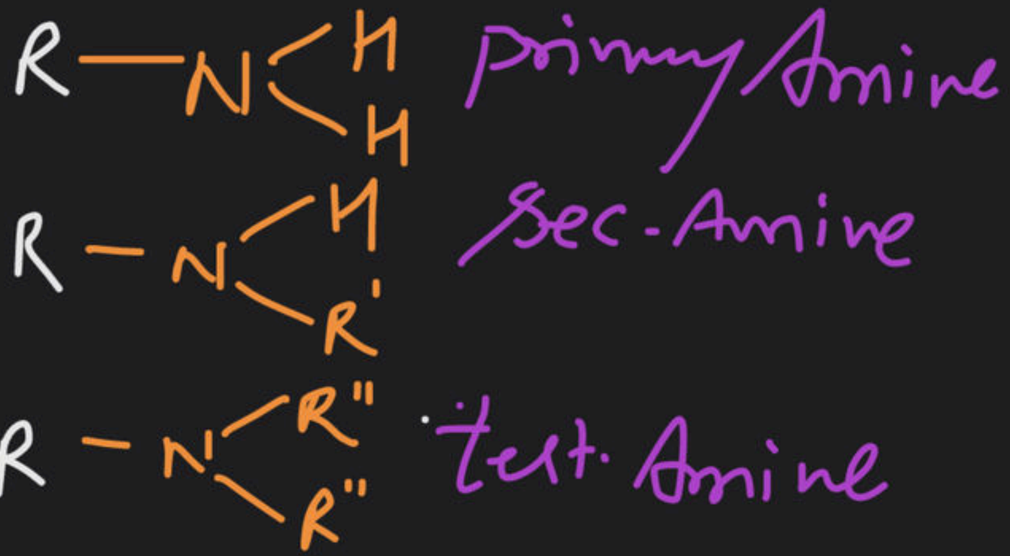
(b) $CH_3-CH_2-OH \xrightarrow{NAD^{+}} (CH_3-CH=O)$

(12) Thiol

$R-SH \quad (R \neq H)$

CH_3-SH

(13) Amine



$R \neq H, R' \neq H, R'' \neq H$

(14) Ethers

$R-O-R'$

$R \neq H$, $R' \neq H$

Ex: CH_3-O-CH_3

(15) Thio Ethers

$R-S-R'$

$R \neq H$, $R' \neq H$

Ex: CH_3-S-CH_3

(16) Nitro

$R-NO_2$ $(R \neq H)$

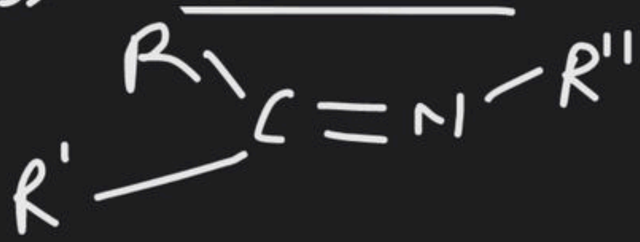
(17) Nitrite

$R-ONO$ $(R \neq H)$

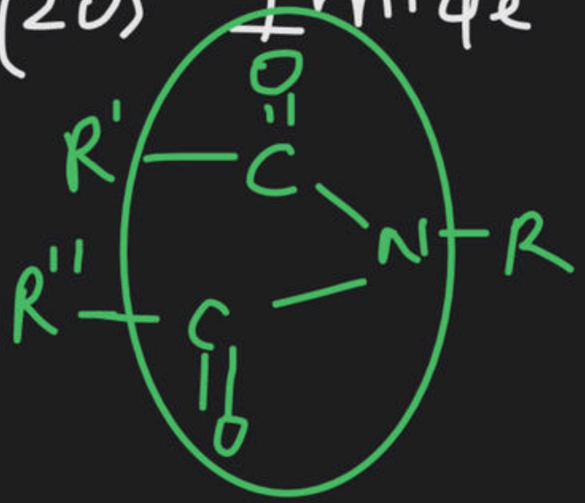
(18) Azide

$R-N_3$ $(R \neq H)$

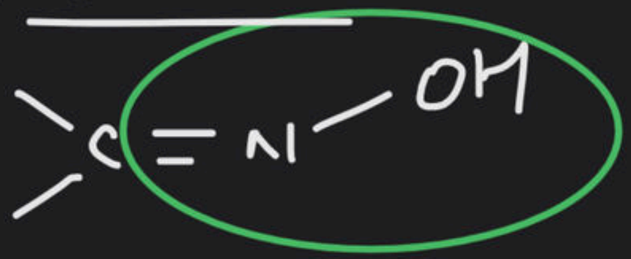
(19) Imine



(20) Imide



(21) Oxime



(22) Diazo.

(23) Halide

$R-X$ ($X = -F, -Cl, -Br, -I$)

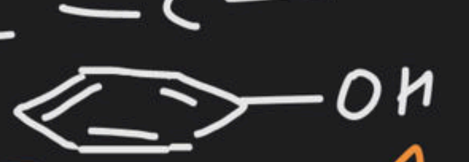
($R \neq H$)

(24) Alkyne

$-C \equiv C-$

(25) Alkene

(26) Phenol



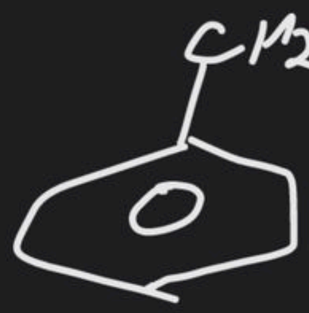
Note (i) Primy., sec. Tertiary Amines are diff fg. $\{-NH_2, -NH-, -N<\}$

(ii) ——— Acid Amides ———

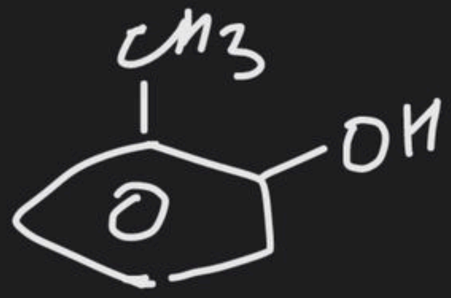
(iii) double & Triple bonds are diff. fg.

(iv) Alcohol & Phenol Both are diff- f-groups.

(a)



Alcohol



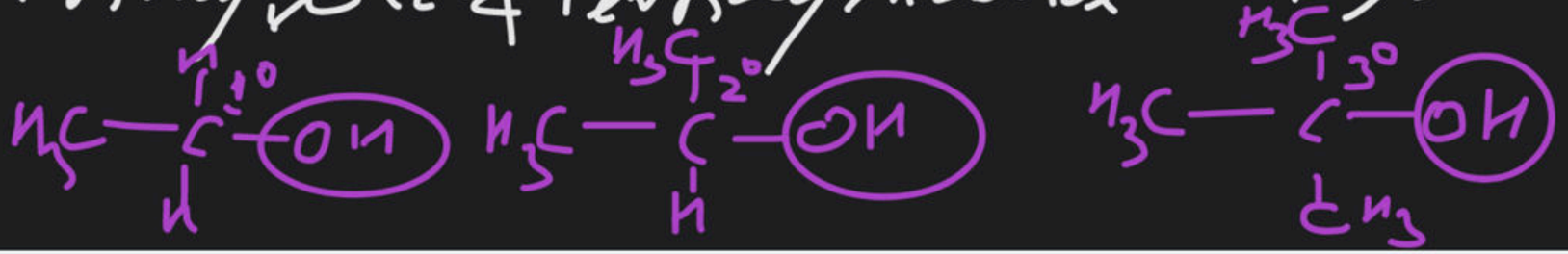
Phenol

(b)

Alcohol

Phenol

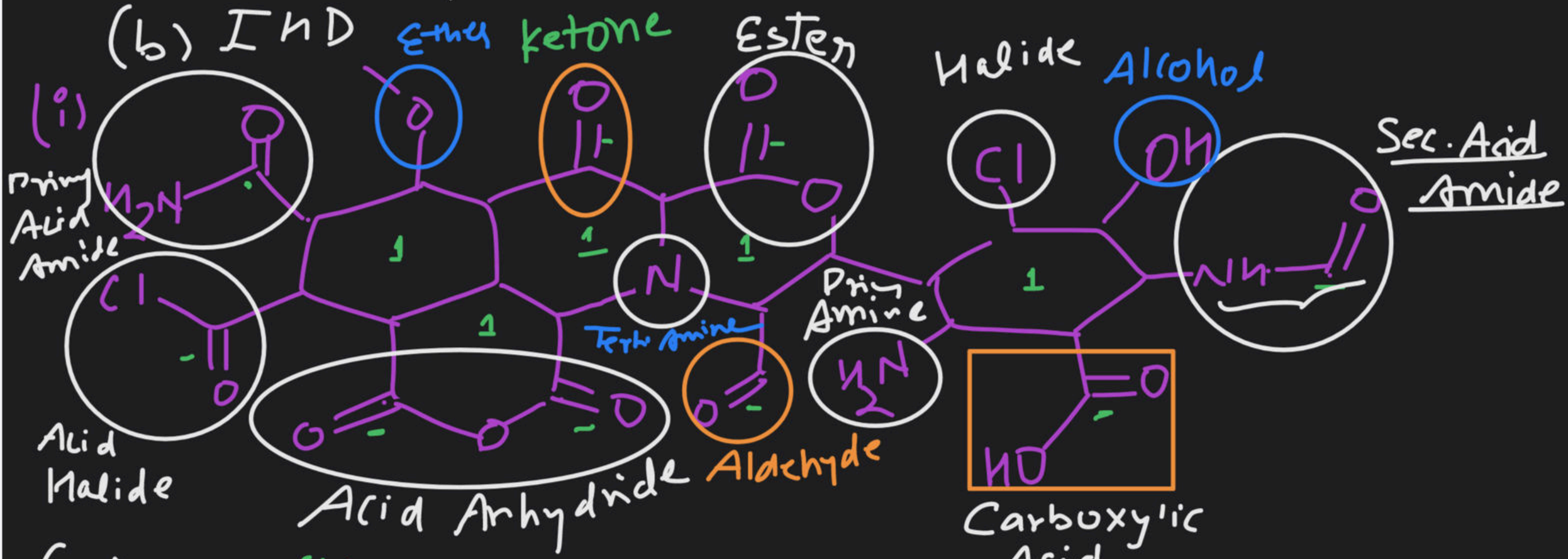
(v) Primy, Sec. & Tertiary Alcohol are same f-gm



Ex: find Total no. of

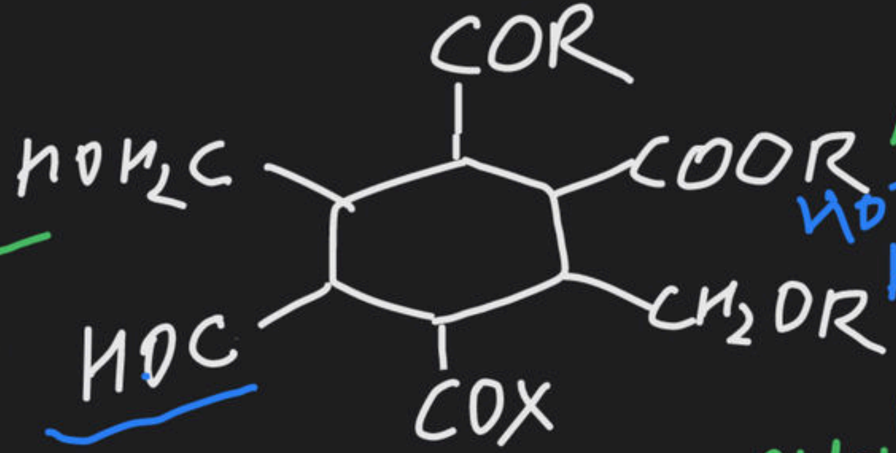
(a) diff. f. groups

(b) IHD

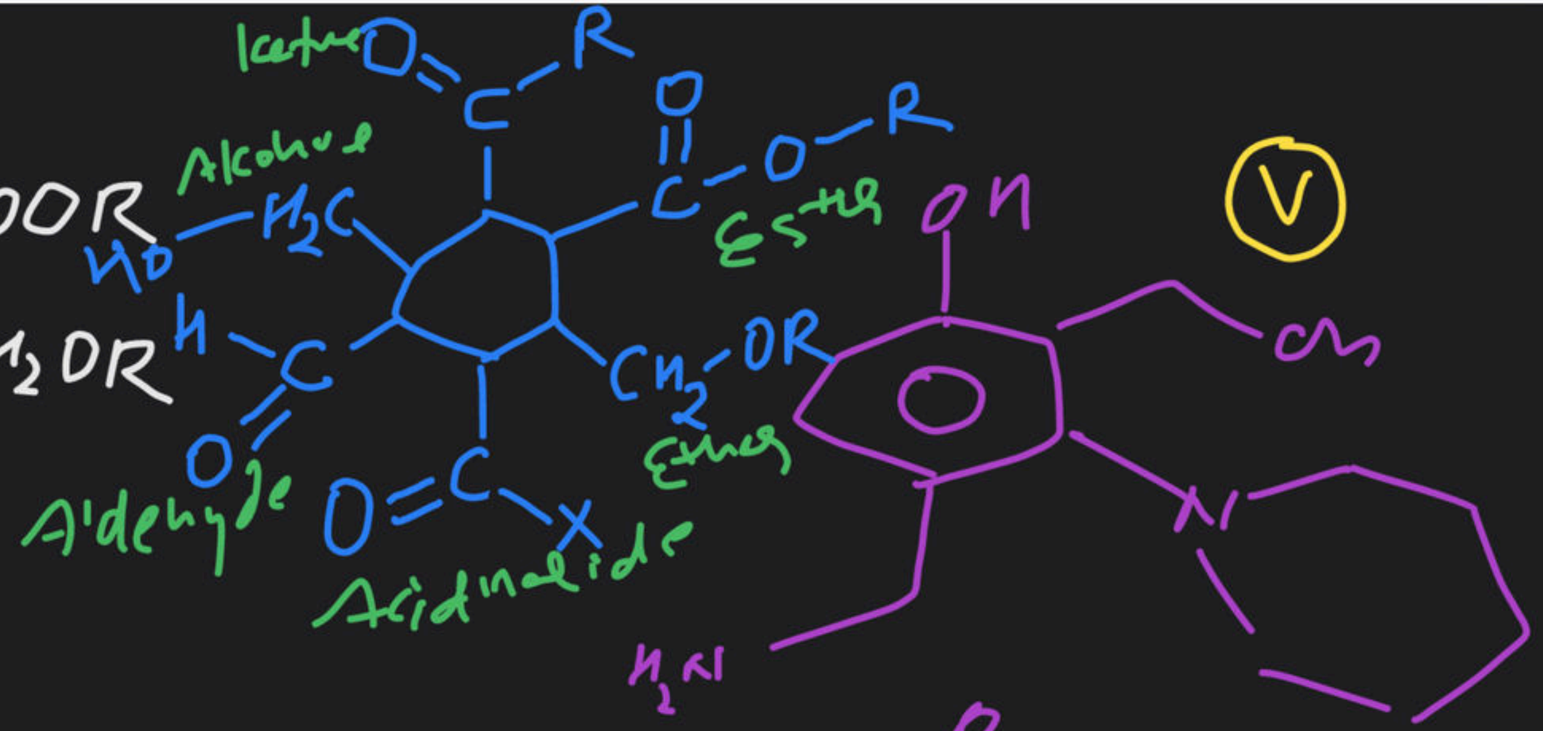


(a) 13 (b) IHD = 9 + 5 = 14

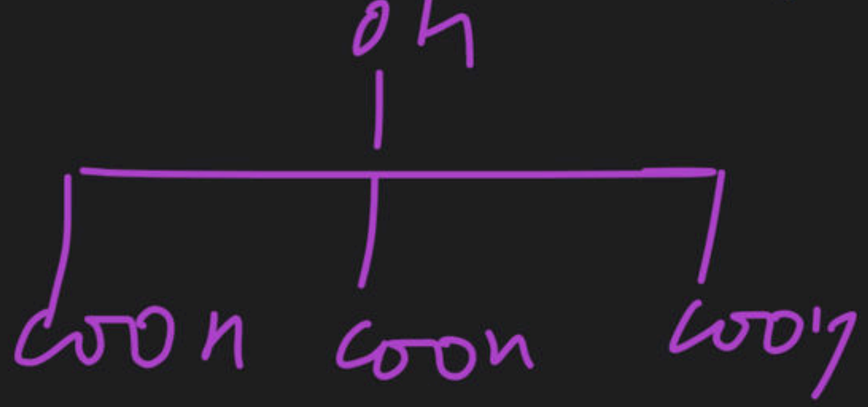
(ii)



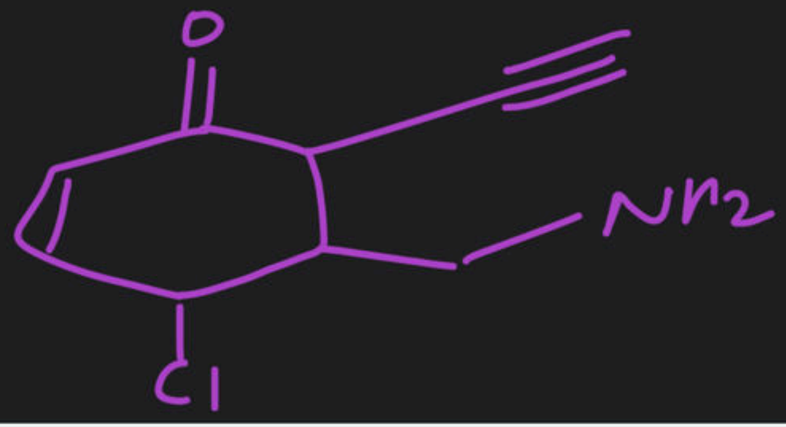
(A) 6
(B) 5
(C) 4
(D) 8



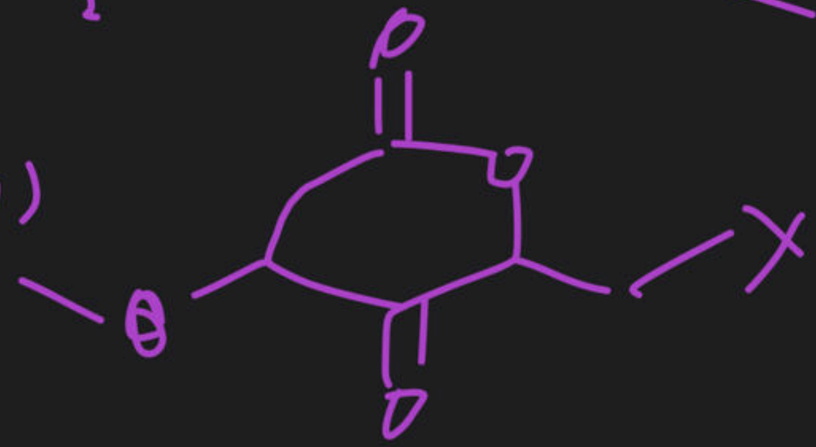
(iii)



(iv)

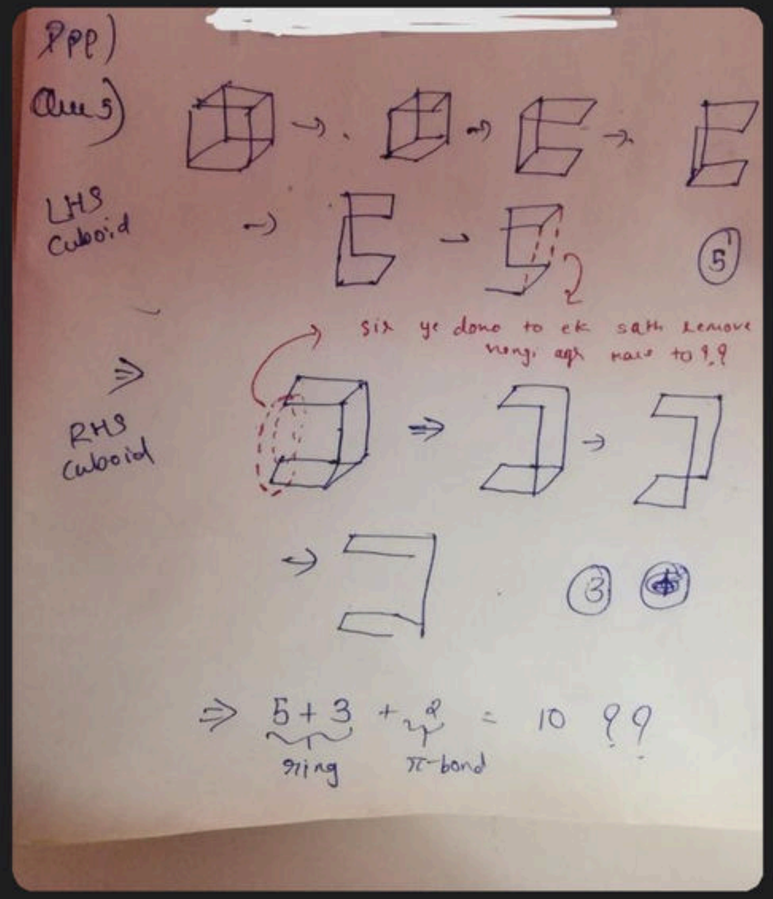


(vi)



Question
from Varun Jain

dpp que 5... double cubane wala que mein 5+4 kaise hua...
5+3 aa rha hai side hatane wali method se



Book

chapter-10

④ 12, 22, 24, 31, 33, 34
36, 39, 51, 52, 54, 55
56, 57, 58, 59, 60, 61
62, 63, 64, 65, 74, 73
77, 86, 87, 88, 90
97, 98