Nishant Jindal

11th OC Chapter Sequence:

(*) UBOC (Ultra Basic Organic chemistry)
(*) BOC (Basic Organic chemistry)
(*) IUPAC (Nomenclature)
(*) GOC (General Organic chemistry)
(*) Structural Isomerism
(*) Hydrocarbon (only for 11th class)

IIT mains & Advanced

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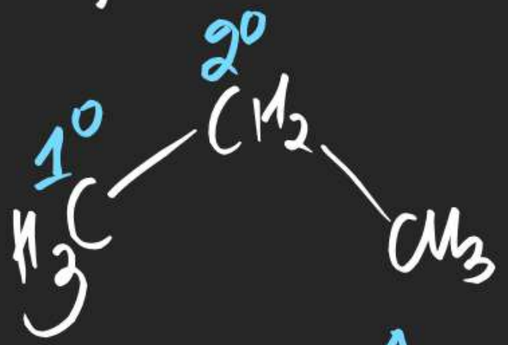
Basic Organic chemisty :

(i) Types of Carbon → Primary Carbon / 1° Carbon ⇒ Carbon attached with 1C or more "C"
→ Secondary Cabon / 2° Cabon ⇒ —— 2C
→ Tertiary Carbon / 3° Cabon ⇒ —— 3C
→ Qutanry Cabon / 4° Cabon ⇒ —— 4C

Ex

Ex:



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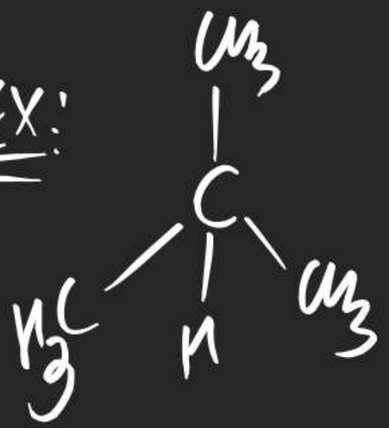

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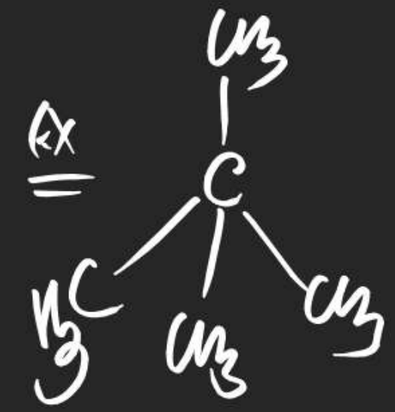
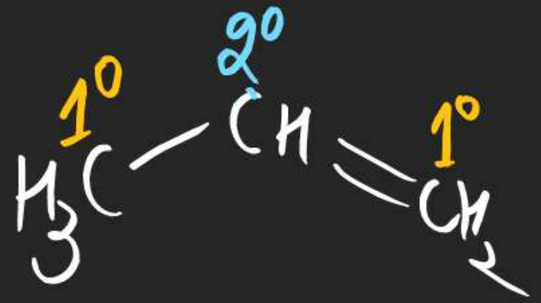
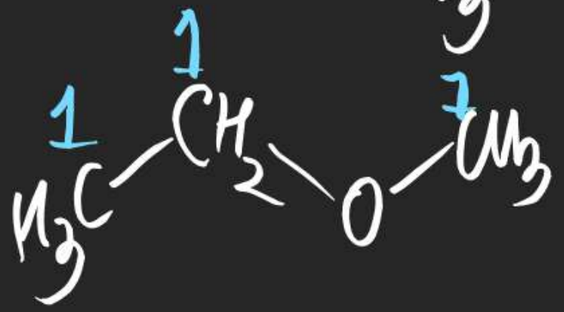


Ex-5:



Ex-6:



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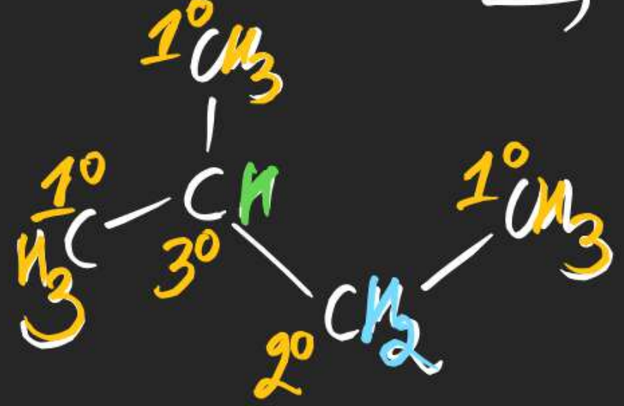
(ii) Types of Hydrogen:

→ Primary Hydrogen / 1° H ⇒ H attached at 1° Carbon
→ Secondary Hydrogen / 2° H ⇒ ——— 2° Carbon
→ Tertiary Hydrogen / 3° H ⇒ ——— 3° Carbon

Ex:-



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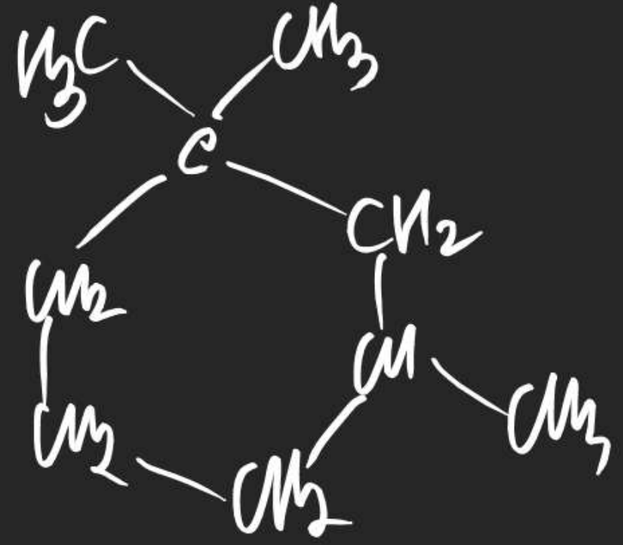
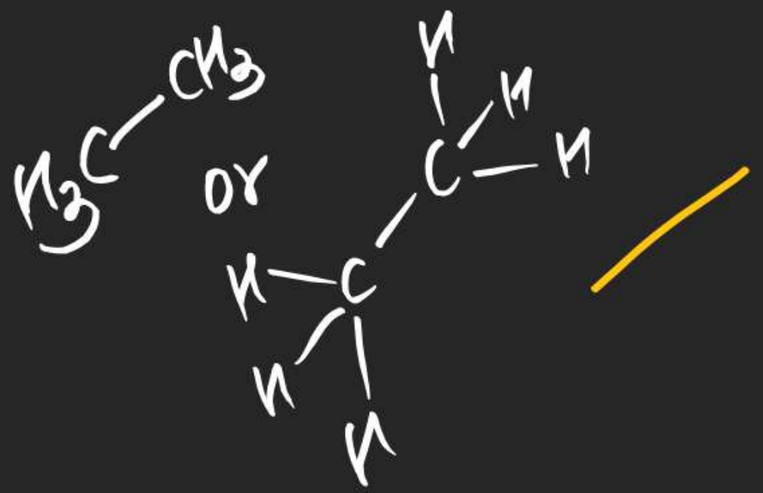


4°C	3°C	2°C	1°C	3°H	2°H	1°H
0	1	1	3	1	2	9

(iii) Bond line Formula:-

(*) Never draw C–H Bond
(*) Represent each Carbon Carbon Bond By line
(*) Each Corner of line formula is a Carbon atom

Ex-1:



Ex-2:

Ex-3

Ex-4:

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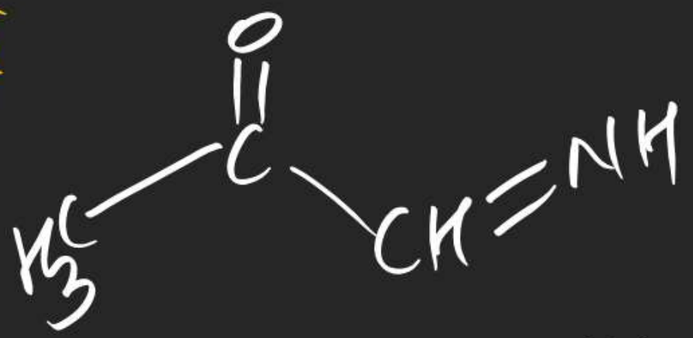
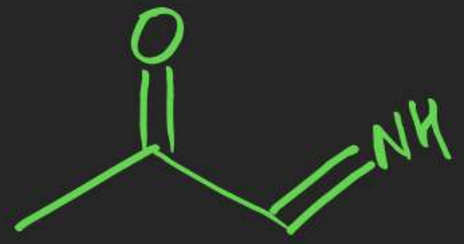
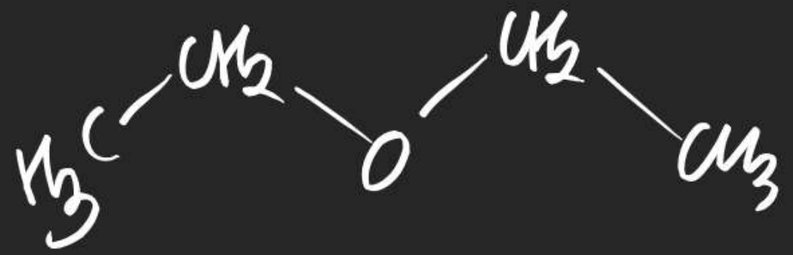
Ex-5

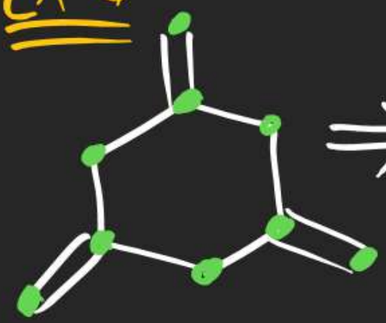


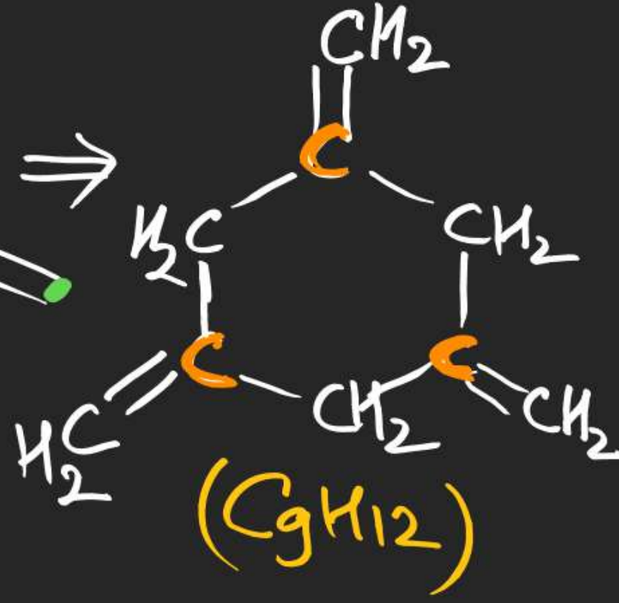


Ex-6



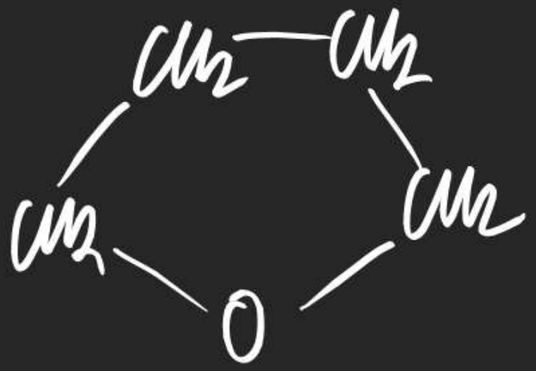
Ex-8



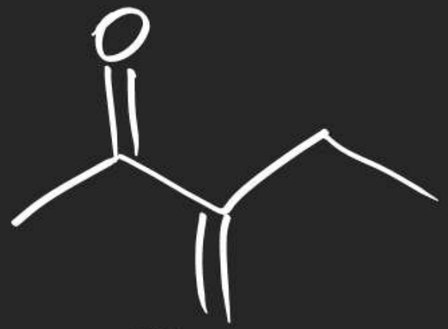


(C_9H_{12})

Ex-7



Ex-9



Ex-10

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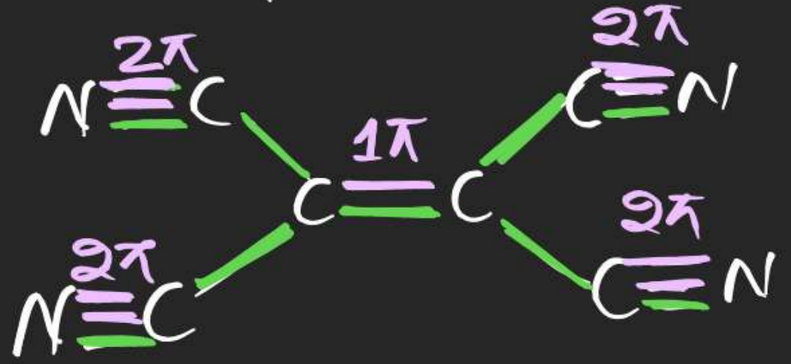
(#) σ & π Bond

Each Simple Bond ⇒ 1σ
Each double Bond ⇒ 1σ + 1π
Each Triple Bond ⇒ 1σ + 2π

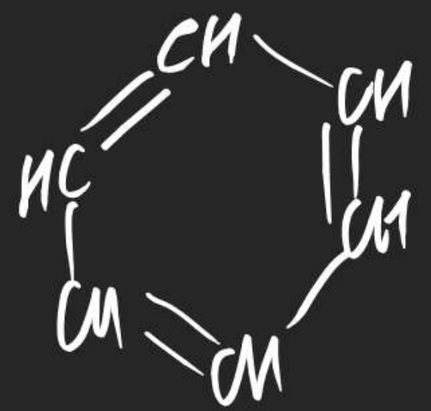
$C \overset{\sigma}{-} C$ / $C \overset{\sigma}{-} N$ / $O \overset{\sigma}{-} H$
$C \overset{\pi}{\underset{\sigma}{=}} C$ / $C \overset{\pi}{\underset{\sigma}{=}} N$ / $C \overset{\pi}{\underset{\sigma}{=}} O$
$C \overset{2\pi}{\underset{\sigma}{\equiv}} C$ / $C \overset{2\pi}{\underset{\sigma}{\equiv}} N$

Ex:



9σ, 9π

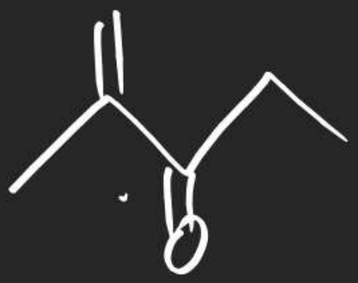
Ex:



Ex:

Ex:

Ex:



(#) Double Bond Equivalent (DBE)
(or) Degree of Unsaturation (DOU)
(or) Index of Hydrogen deficiency (IHD)

$$= \frac{\Delta n_H}{2} = \text{Total No. of Rings} + \text{Total No. of } \pi \text{ Bonds}$$

When Str. is not given — when Str is given

Alkane C_nH_{2n+2}

Ex-1:

$DBE = DOU = IHD$
$= 1 + 2$
$= 3$

Ex-2: C_8H_{18}
C_8H_8
$\Delta n_H = 10$

$DBE = DOU = IHD$
$= \frac{\Delta n_H}{2} = \frac{10}{2} = 5$

Note (i) monovalent atom ($-F, -Cl, -Br, -I, -D, -T$) $\Rightarrow$ Replace By "H"
(ii) Bivalent atom (O) $\Rightarrow$ Neglect these atoms.
(iii) Trivalent atom (N) $\Rightarrow$ Neglect (NH)

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Ex-3: $C_6H_2Cl_3Br_3 \Rightarrow C_6H_2H_3H_3 \Rightarrow \begin{matrix} C_6H_{14} \\ C_6H_8 \\ \hline \Delta n_H = 6 \end{matrix}$ (DOU = 3)

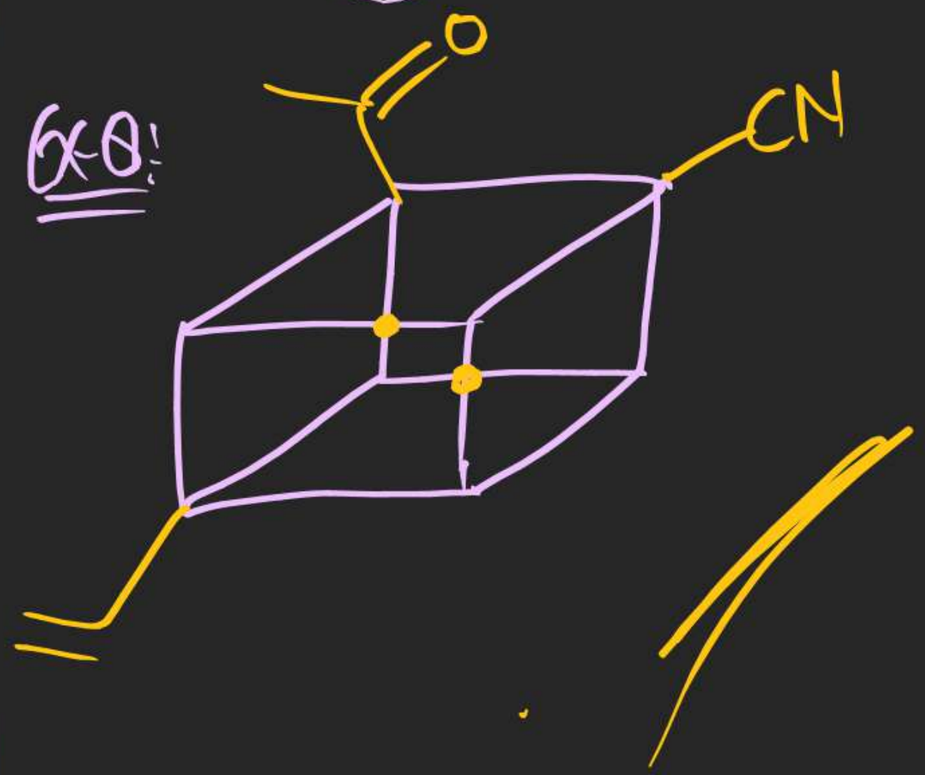
Ex-4: $C_4H_4O_2$

Ex-5: C_5H_9N

Ex-6: $C_7H_{11}O_2N$

Ex-7:

Ex-8:



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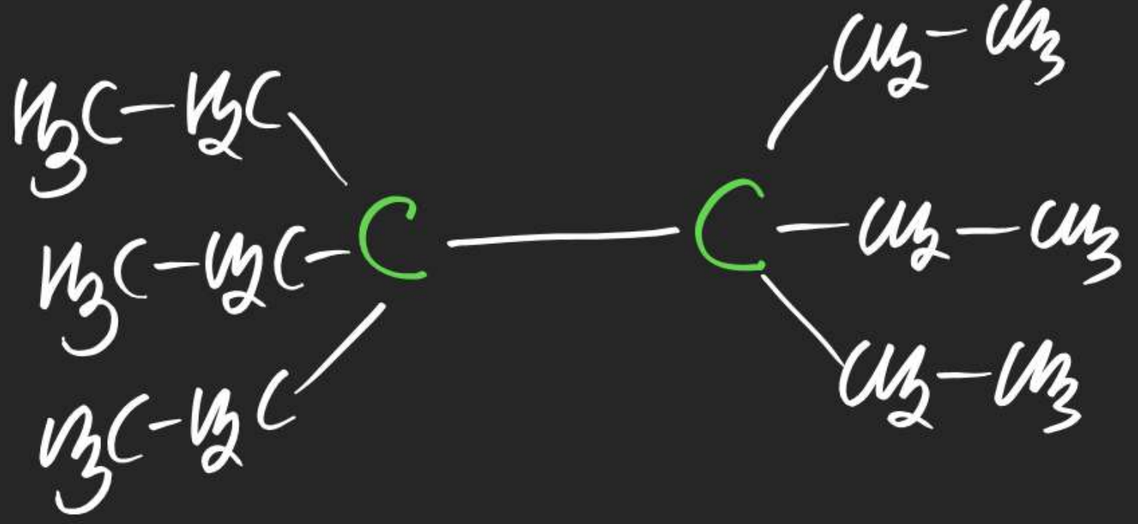
(#) Condense Formula:

Ex: $(H_3C)_4C$



Ex: $(H_3C-H_2C)_6C_2$

Ex: $(NC)_4C_2$

Ex: $\left(CH_3-\underset{\underset{O}{\|}}{C}\right)_4C$

Theory Copy Register ⇒ (Class Theory + Class Question)

Register ⇒ DPP & sheat

Register ⇒ Blue Book [Problems & Solutions of Organic chemistry]

Cengage Publications

Updated "3e"

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Time schedule :-

Study

1 hr + Chem — 9:30 pm — 12:00 am

hr
6:30 ≤ ST < 7 hr

12:00 am — 6:30 am (Sleeping Time)

6:30 am — 7:30 am [Ready + Fresh + B.F]

1 hr + Phys — 7:30 am — 10:30 am

1 hr + Math — 10:30 am — 1:30 pm

1:30 pm — 2:30 pm (Lunch + Relax)

2:30 pm — 4:00 pm

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For School

9:30 — 12:30 am

- 9:30pm–10:30 P
- 10:30pm–11:30 C
- 11:30pm–12:30 M

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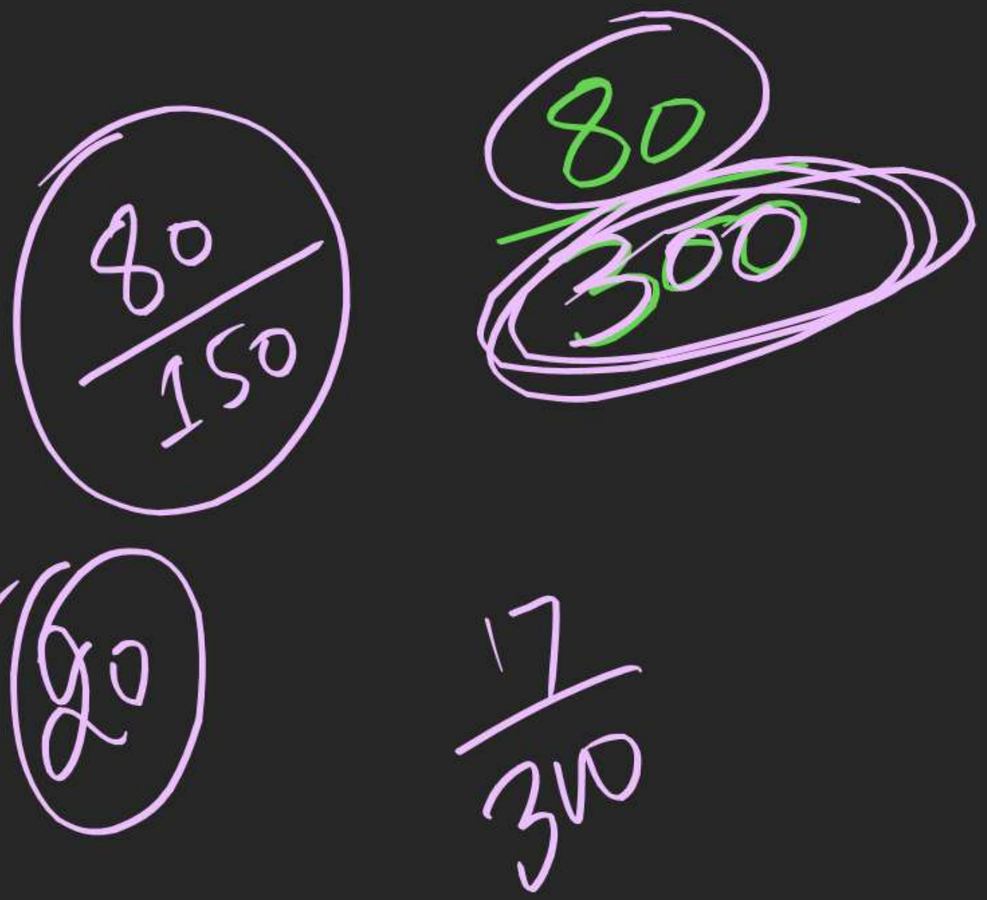

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IUPAC

Functional Group