Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Class - 10

Chapter - 4

Carbon and its Compound

Part-5

Hydrocarbons

Disha Didi (DD)

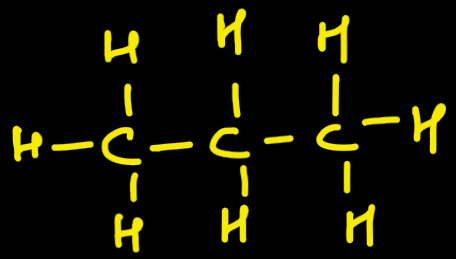
Under CSR Support by
ipca | Foundation

Cycloalkanes → C_nH_{2n}

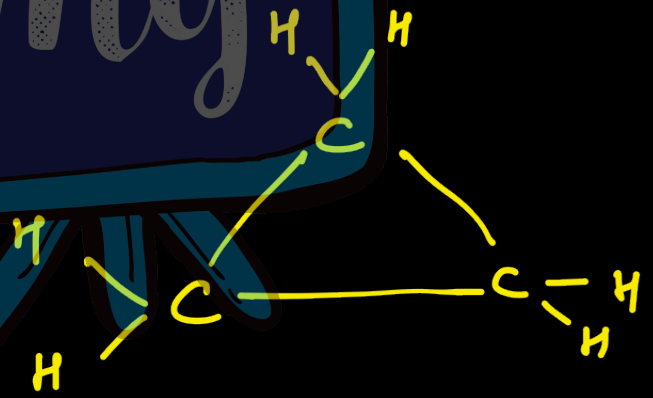
1. Cyclopropane

Propane

$n = 3$



cyclopropane →

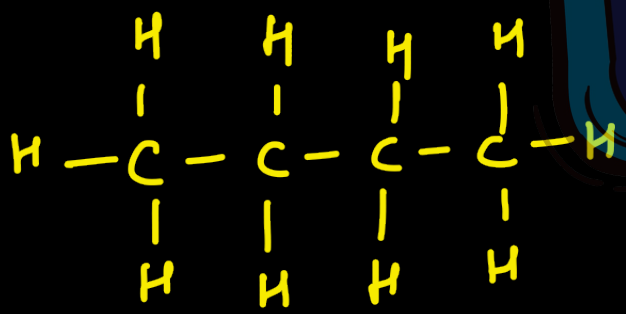


C_3H_6

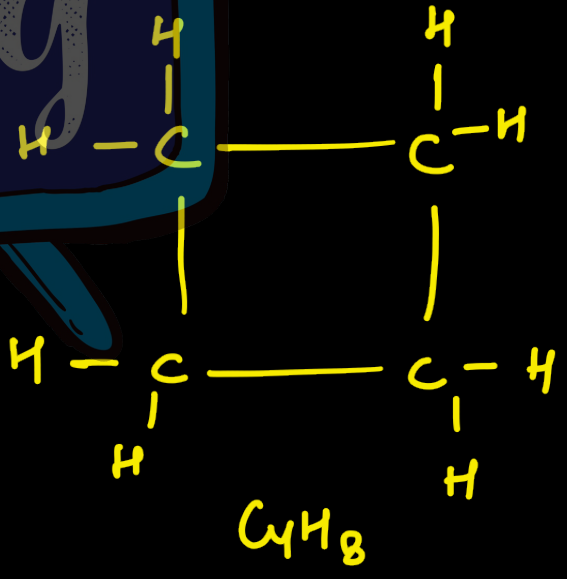
Under CSR Support by
ipca | Foundation

2. Cyclobutane

Butane



cyclobutane



C_4H_8

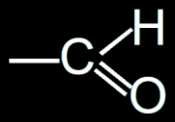
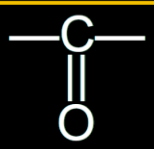
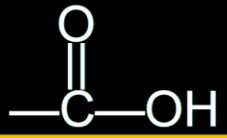
Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Functional Group

- Specific atoms or group of atom or ion.
- Part of a hydrocarbon chain import characteristic properties to the compounds.

Under CSR Support by
ipca | Foundation

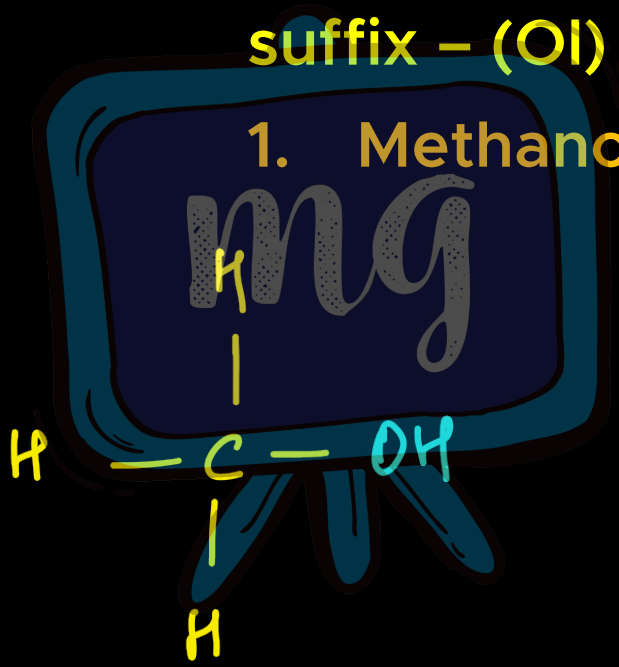
Class of Compounds	Formula of functional group
1. Alcohol	—OH
2. Aldehyde	
3. Ketone	
4. Carboxylic acid	
5. Halo– (chloro / bromo) alkanes	—Cl,—Br

Under CSR Support by
ipca | Foundation

Series of alcohol

suffix – (Ol)

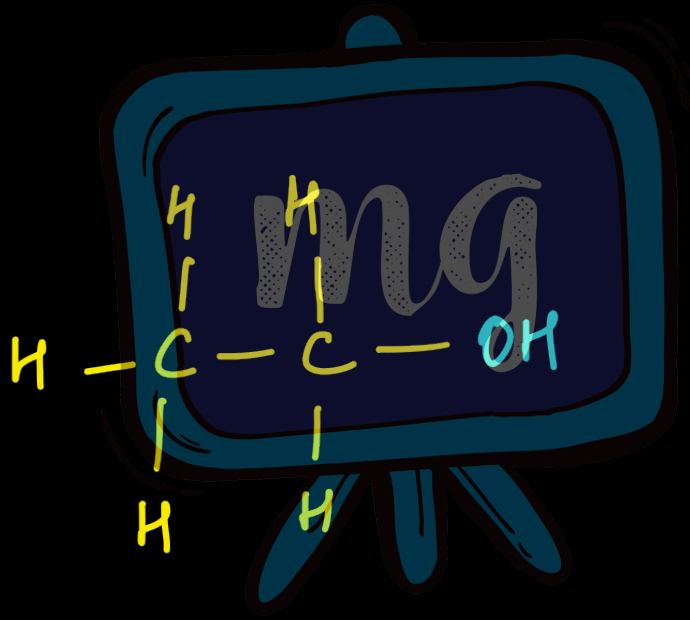
1. Methanol



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

2. Ethanol



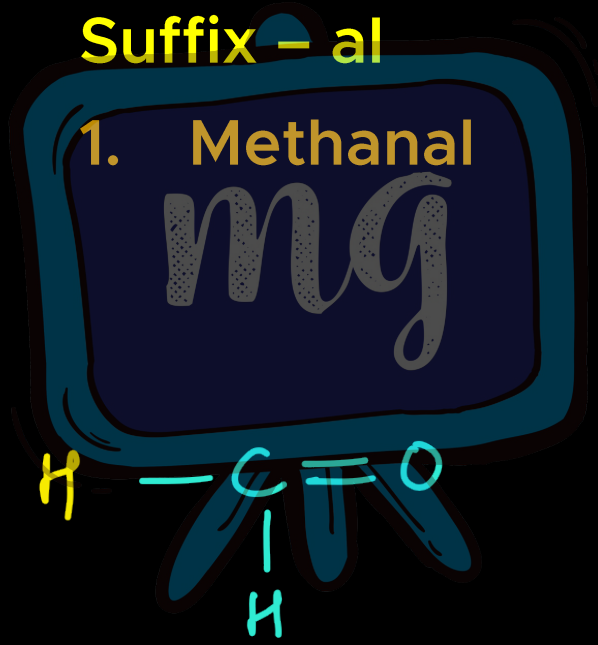
Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Series of Aldehyde —C(=O)—H(—CHO)

Suffix – al

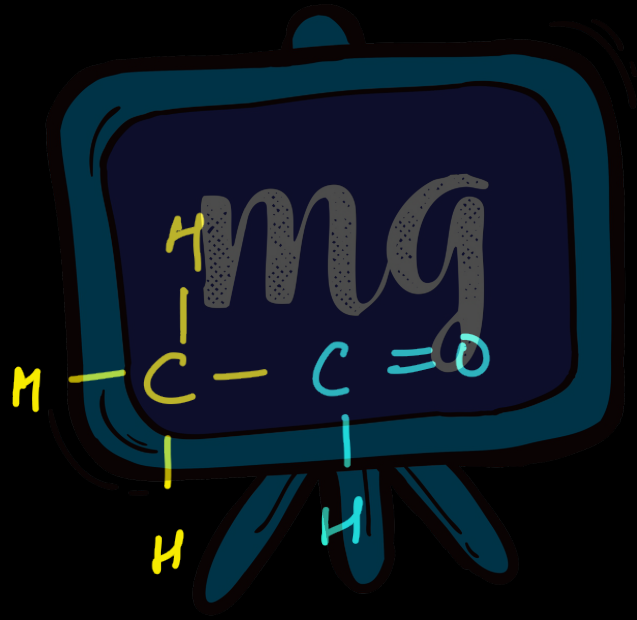
1. Methanal



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

2. Ethanal



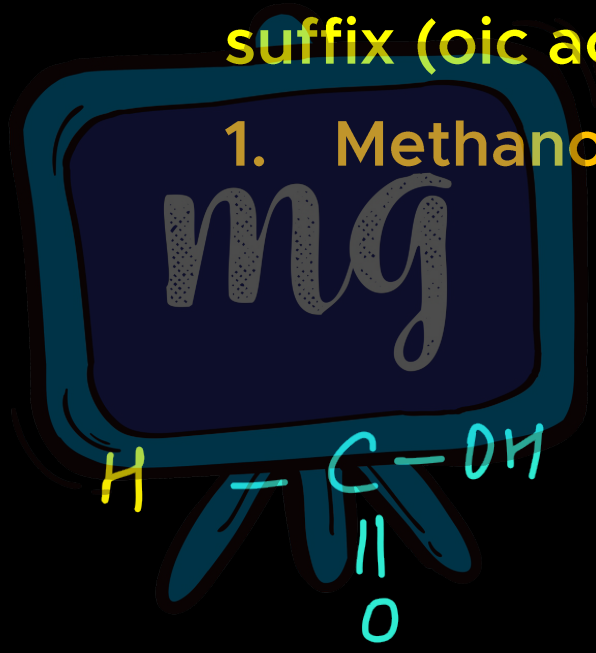
Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Carboxylic Acid —C(=O)—OH (—COOH)

suffix (oic acid)

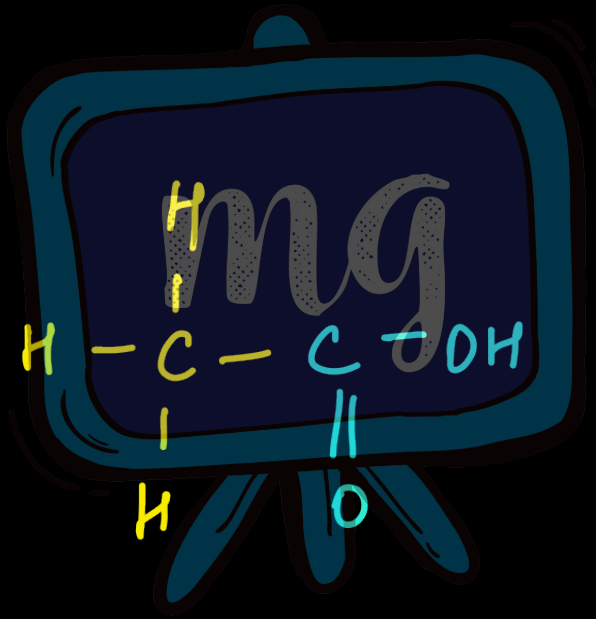
1. Methanoic acid



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

2. Ethanoic acid



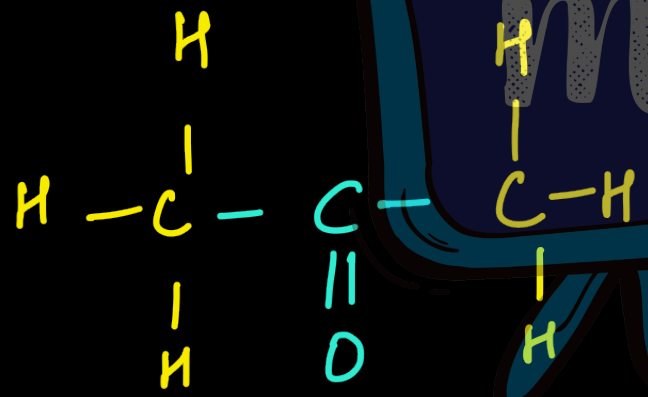
Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Series of Ketone —C(=O)—

Suffix —(One)

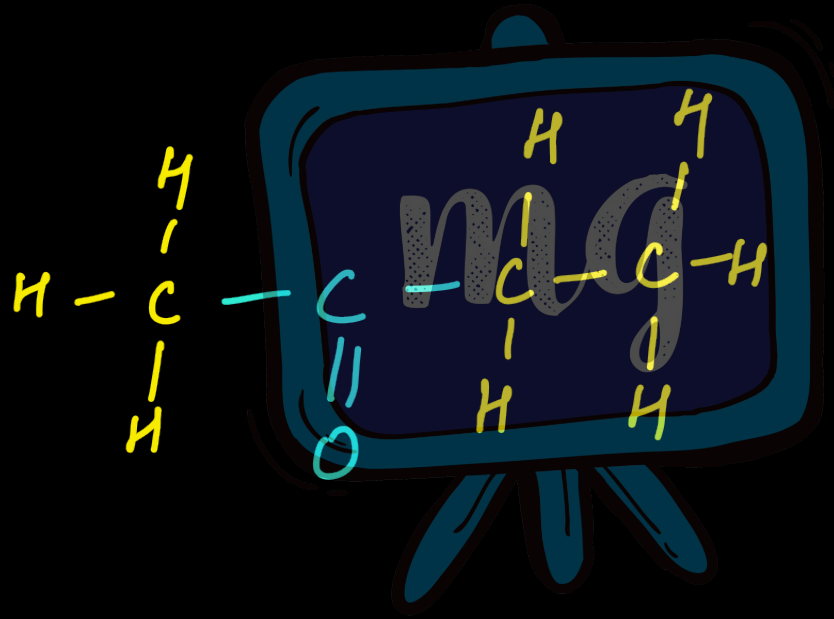
1. Propanone



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

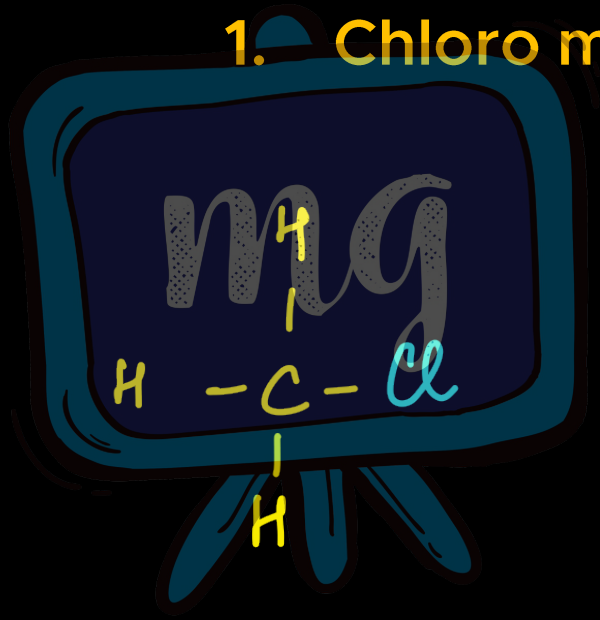
2. Butanone



Under CSR Support by
ipca | Foundation

Halo alkanes

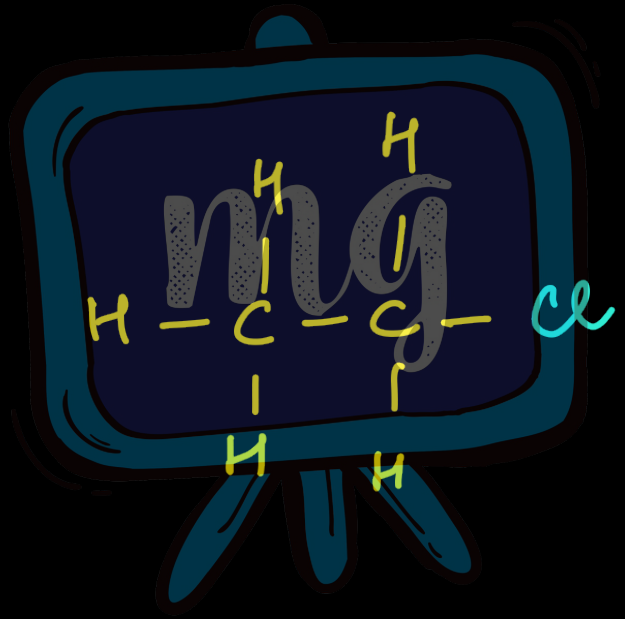
1. Chloro methane



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

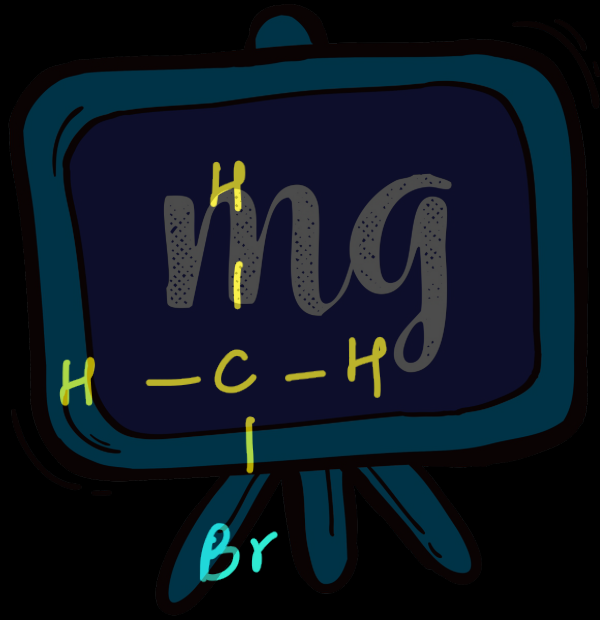
2. Chloro Ethane



Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

3. Bromo methane



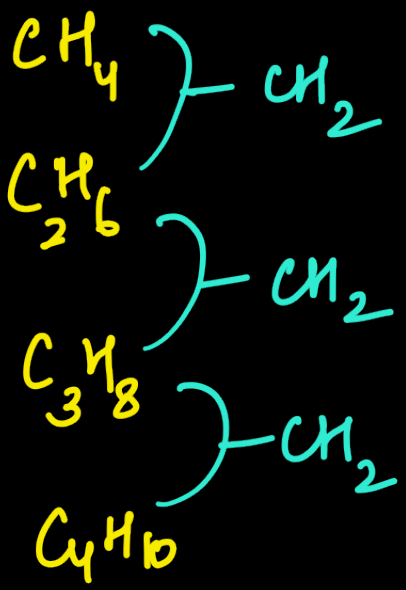
Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Homologous Series :

- A series of compounds in which the same functional group substitutes for hydrogen in a carbon chain.
- Same general formula
- Two successive compounds differ by $-CH_2$

Under CSR Support by ipca | Foundation



Example : CH_4

C_2H_6

Difference in molecular mass is 14μ

Same chemical properties

Gradual change in physical properties.

$C = 12M$

$H = 1M$

$\therefore$ $CH_2 = 14M$ difference b/w each consecutive alkane

Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

Q.1 How would name the following compounds?

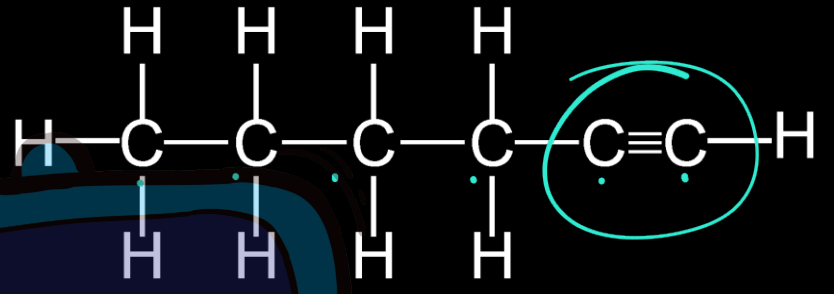
(i) $CH_3—CH_2—Br$ Bromo ethane

(ii)
$$\begin{array}{c} H \\ | \\ H—C=O \end{array}$$
Methanal

Under CSR Support by
ipca | Foundation

LET'S LEARN TOGETHER

(iii)



Hexyne