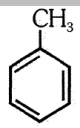
CLASSIFICATION & NOMENCLATURE

BEGINNER'S BOX-1

1. How many 1º, 2º & 3º H atoms are present in  [Toluene] respectively:-

(1) 3, 0, 5 (2) 3, 5, 0 (3) 4, 3, 0 (4) 0, 5, 3

2. What is hybridisation of each carbon atom in following compound $HC\equiv C-CH=CH-CH_3$

(1) sp, sp^2, sp^2, sp^2, sp^3 (2) sp, sp, sp^2, sp^2, sp^3

(3) sp, sp, sp^2, sp^3, sp^3 (4) sp, sp^2, sp^2, sp^3, sp^3

3. Which one is not correct for a homologous series -

(1) All members have a general formula

(2) All members have same chemical properties

(3) All members have same physical properties

(4) All members have same functional group

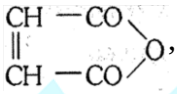
BEGINNER'S BOX-2

1. How many carbon atom are present in third homologue of methyl ether.

(1) 1 (2) 2 (3) 3 (4) 4

2. Which of the following is not a hetero cyclic compound

(1) Thiophene (2) Furane (3) Benzene (4) Pyridine

3. In structure  , how many hetero atoms are present ?

(1) 1 (2) 2 (3) 3 (4) 4

BEGINNER'S BOX-3

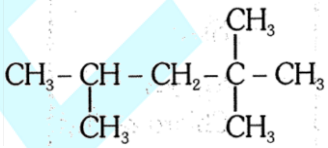
1. Which of the followings is incorrect name :-

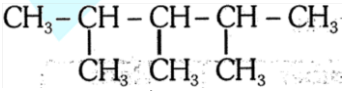
(1) Isopropyl (2) Ter. Butyl (3) Neo butyl (4) Neo pentyl

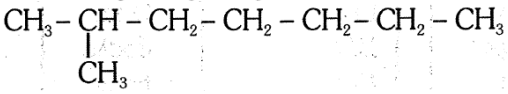
2. Which of the followings is secondary radical :-

(1) $CH_2=CH$ (2) $(CH_3)_3C-$ (3) C_6H_5- (4) $CH_3-(CH_2)_2-CH_2-$

3. Which of the followings is isooctane :-

(1) 

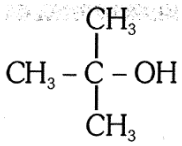
(2) 

(3) 

(4) None

BEGINNER'S BOX-4

1. Comrnon.name of given compound is :-



(1) Neobutyl alcohol
(2) Isobutyl alcohol
(3) Tertiary butyl alcohol
(4) Secondary butyl alcohol

2. Which of the following is Crotonic acid ?
(1) CH_2=CH–COOH
(2) CH_3–CH=CH– CHO
(3) CH_3–CH_2–CH_2–COOH
(4) CH_3–CH=CH–COOH

3. What is derived name of Neopentyl alcohol :-
(1) Isopropyl carbinol
(2) n-Butyl carbinol ·
(3) Tertiary butyl carbinol
(4) Ethyl methyl carbinol

Format for IUPAC name

s–prefix	+	p–prefix	+	word root	+	p–suffix	+	s–suffix
Substituents with locants		cyclo		Alk word according to carbon in parent C chain		–ane –ene –yne		According to main functional group given in priority table

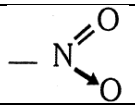
(a) **Locant :-** Locants are separated by (,) comma.
γ Locants and alphabets are separated by hyphen (–). [2, 3-dimethyl pentane]
• di, tri, iso, neo and cyclo are neither separated by comma nor by hyphen

(b) **Prefix :-** According to substituents .
Prefix (es) are written in alphabetical order before root word.

prefix ← { 1° or p – prefix ; 2° or sec. – prefix }

Cyclo is 1° prefix and used for cyclic compound.
2° prefix is used for substituents and written before 1° prefix.
For acyclic compounds : 2° prefix + Root word + 1° Suffix + 2° suffix.

Substituents	Prefix
–R	Alkyl group
–X (F, Cl, Br, I)	Halo
–O, –N=O	Nitrite
$-CH_2OH$	Hydroxy methyl
$-NHC_2H_5$	Ethyl amino

Substituents	Prefix
–OR	Alkyl group
	Nitro

–N=O	Nitroso
$–CH_2Cl$	Chloro methyl

(c) Word root :- According to number of carbons in parent C-chain.

Number of carbons	Root word
1	Meth
2	Eth
3	Prop
4	But
5	Pent

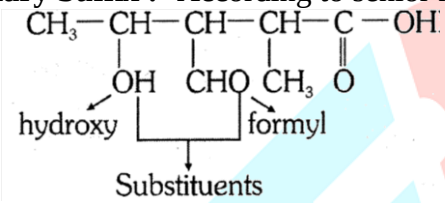
Number of carbons	Root word
6	Hex
7	Hept
8	Oct
9	Non
10	Dec

Number of carbons	Root word
11	Undec
12	dodec
13	tridec

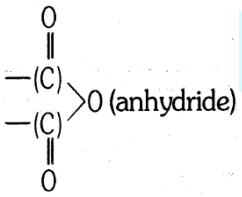
(d) Primary suffix :- According. to saturation .and unsaturation.

C–C ⟶ ane C=C ⟶ ene C≡C ⟶ yne

(e) Secondary Suffix :- According to senior most of F. G.



3-Formyl-4-hydroxy-2-methyl pentanoic acid

S. NO.	Functional group	Prefix	Suffix
1.	–(C) OOH (carboxylic acid) –COOH	× carboxy	oic acid carboxylic acid
2.	$–SO_3H$ (sulphonic acid)	sulpho	sulphonic acid
3.		×	oic anhydride
4.	–(C) OOR (ester) –COOR	× alkoxy carbonyl or carbalkoxy	alkyl------oate
5.	–(C)OX (acid halide)	× halo formyl	oyl halide carbonyl halide
6.	$–(C)ONH_2$ (amide) $–CONH_2$	× Carbonyl	carboxamide nitrile
7.	–(C)N (cyanide) –CN	× cyano	nitrile carbonitrile
8.	–N ⇉ C (isocyanide)	isocyano/carbyl amino	isonitrile/carbyl amine

9.	–(C)HO (aldehyde) –CHO	oxo formyl	al carbaldehyde
10.	—(C)— ‖ O (Ketone)	keto/oxo	one
11.	–OH (alcohol)	hydroxyl	ol
12.	–SH (thio alcohol)	mercapto	thiol
13.	$-NH_2$ (amine)	amino	amine

Note : (C) atom written in brackets means that it has been included in the parent chain.

SUBSTITUENTS	PREFIX	SUBSTITUENTS	PREFIX
–R	alkyl	–X	halo
$-NH_2$	amino	$-N\begin{matrix}O\\ \diagup\\ \diagdown\\ O\end{matrix}$	nitro
–O–N=O	nitrito	–N=O	nitroso
$-OCH_2CH_3$	ethoxy	$-CH_2-OH$	hydroxyl methyl
$-CH_2-Cl$	chloro methyl	$-NH-CH_3$	methyl amino
–S–	thio		
$CH_3-\overset{\overset{O}{\|}}{C}-O-$	acetoxy/ethanoyloxy	$CH_3CH_2-\overset{\overset{O}{\|}}{C}-O-$	propanoyloxy
$C_6H_5-\overset{\overset{O}{\|}}{C}-O-$	benzoyloxy	–OR $-OC_6H_5$	Alkoxy phenoxy

BEGINNER'S BOX-5

1. Which of the following selected chain is correct:-

(1) $CH_3-\underset{\underset{CH_2-OH}{|}}{CH}-CH_2-CH_2-CH_3$

(2) $CH_2=CH-\underset{\underset{COOH}{|}}{CH}-CH=CH_2$

(3) $CH_2=CH-CH_2-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_2}{|}}{CH}}-CH_3$

(4) $CH_3-\underset{\underset{OH}{|}}{CH}-\underset{\underset{CH=CH_2}{|}}{CH}-CH_2-CH_3$

2. Which of the following has correct numbering according IUPAC:-

(1) $\overset{7}{CH_3}-\overset{6}{CH_2}-\underset{\underset{C_2H_5}{|}}{\overset{5}{CH}}-\overset{4}{CH_2}-\underset{\underset{CH_3}{|}}{\overset{3}{CH}}-\overset{2}{CH_2}-\overset{1}{CH_3}$

(2) $\overset{1}{CH_2}=\overset{2}{CH}-\overset{3}{CH_2}-\overset{4}{CH_2}-\overset{5}{C}\equiv N$

(3) $\overset{1}{CH_3}=\underset{\underset{CHO}{|}}{\overset{2}{CH}}-\overset{3}{CH_2}-\overset{4}{CH_2}-\overset{5}{CH_3}$

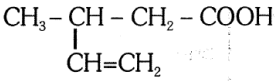
(4) $CH_3-CH_2-\underset{\underset{C\equiv N}{|}}{\overset{2}{CH}}-\underset{\underset{CH_2}{||}}{\overset{3}{C}}-CH_2-CH_3$

3. Which of the following functional group has hig~est priority according to priority table :-

(1) –COOR (2) $-CONH_2$ (3) –CHO (4) –OH

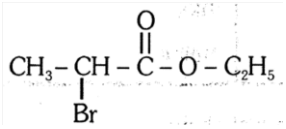
BEGINNER'S BOX-5

1. Correct IUPAC name of compound is:-

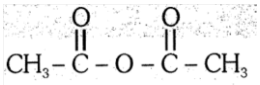


(1) 3-Ethenyl butanoic acid
(2) 3-Ethynyl butanoic acid
(3) 3-Methyl but-4-enoic acid
(4) 3-Methyl pent-4-enoic acid

2. Correct IUPAC name of compound is :-



(1) 2-Bromo-1-ethyl propanoate
(2) 1-Ethyl-2-bromopropanoate
(3) Ethyl-2-bromopropanoate
(4) Ethyl-3-bromo propanoate

3. IUPAC name of  is:-

(1) Acetic anhydride
(2) Methanoic anhydride
(3) Ethanoic methanoic anhydride
(4) Ethanoic anhydride

ANSWER KEY

BEGINNER'S BOX-1

1.	(2)	**2.**	(2)	**3.**	(3)

BEGINNER'S BOX-2

1.	(4)	**2.**	(3)	**3.**	(1)

BEGINNER'S BOX-3

1.	(3)	**2.**	(3)	**3.**	(1)

BEGINNER'S BOX-4

1.	(3)	**2.**	(4)	**3.**	(3)

BEGINNER'S BOX-5

1.	(4)	**2.**	(4)	**3.**	(1)

BEGINNER'S BOX-6

1.	(4)	**2.**	(3)	**3.**	(4)