

## (...Contd.) ORGANIC CHEMISTRY : BASIC PRINCIPLES AND TECHNIQUES

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### IUPAC Nomenclature of organic compounds containing one functional group

1. **Haloalkanes:** Halogen derivatives of alkanes are called haloalkanes. They are further classified as mono, di, tri, and tetrahaloalkanes, etc. as they contain one, two, three, four, etc. halogen atoms respectively in their molecules.

(a) **Monohaloalkanes:** The monohalogen derivatives of alkanes are called alkyl halides.

General formula:  $C_nH_{2n+1}X$  where  $n = 1, 2, 3, \dots$  etc.  $X = F, Cl, Br, \text{ or } I$

Or  $R-X$  where  $R$  is any alkyl group

Functional Group:  $X$  (halogen)

Secondary prefix = halo

Common name : Add the word halide ( fluoride, chloride, bromide, iodide) to the name of the group i.e. Alkyl + halide = Alkylhalide

IUPAC names: Add the secondary prefix 'halo' to the name of the corresponding alkane . i.e.

Halo+alkane= Haloalkane. For example

Formula	Common name	IUPAC name
$CH_3Cl$	Methyl chloride	Chloromethane
$CH_3CH_2-Br$	Ethyl bromide	Bromoethane
$CH_3CH_2CH_2-I$	n-Propyl iodide	1-Iodopropane
$CH_3CHI-CH_3$	Isopropyl iodide	2-Iodopropane

(b) **Dihaloalkanes:** Alkanes containing two halogen atoms per molecule are called dihaloalkanes. General Formula:  $C_nH_{2n}X_2$  where  $n=1,2,3,\dots$  etc.

Common name: For purpose of naming, dihalogen derivatives of alkanes, are divided into three categories :

(i) Alkylidene dihalides:- Dihalogen derivatives of alkanes in which the two halogen atoms are

attached to the same carbon atom are called alkylidene dihalides or alkylidene halides.

(ii) Alkylene dihalides :- Dihalogen derivatives of alkanes in which the two halogen atoms are attached to adjacent carbons of chain are called alkylene dihalides or simply alkylene halides.

(iii) Polymethylene dihalides:- Dihalogen derivatives of alkanes in which the two halogen derivatives are present on the terminal carbon atoms ,i.e.,  $\alpha, \omega$ , positions of the carbon chain are called polymethylene dihalides.

IUPAC name:- In the IUPAC system, all type of dihalides are called dihaloalkanes, the position of the halogen atoms being indicated by lowest possible Arabic numerals. The common and IUPAC names of some dihalogen alkanes are given below:

Formula	Common name	IUPAC name
$CH_2Cl_2$	Methylene chloride	Dichloromethane
$CH_3CH-Br_2$	Ethylidene dibromide	1,1-dibromoethane
$Br-CH_2CH_2-Br$	Ethylene dibromide	1,2-dibromoethane
$CH_3CH_2CHCl_2$	Propylidene dichloride	1,1-dichloropropane
$CH_3CHClCH_2Cl$	Propylene dichloride	1,2-dichloropropane
$CH_3C(Cl_2)CH_3$	Isopropylidene dichloride	2,2-dichloropropane
$Cl-CH_2CH_2CH_2Cl$	Trimethylene dichloride	1,3-dichloropropane

(c) **Tri- and tetrahaloalkane:-** General Formula of trihaloalkanes =  $C_nH_{2n-1}X_3$  while that of tetrahaloalkane is  $C_nH_{2n-2}X_4$  , where  $n=1,2,3,4,\dots$  etc. and  $X = F, Cl, Br, I$ .

IUPAC name:- In the IUPAC system, these are called trihaloalkanes and tetrahaloalkanes. The position of the halogen atoms on the carbon chain being indicated by Arabic numerals.

Common names: -Trihaloalkanes are best known by their common names i.e., haloform, tetra halogen derivatives of methane are called carbon tetrahalides. While symmetrical tetra halogen derivatives of ethane are called acetylene tetrahalides.

For example:-

Formula	Common name	IUPAC name
CHF <sub>3</sub>	Fluoroform	Trifluoromethane
CHCl <sub>3</sub>	Chloroform	Trichloromethane
CHBr <sub>3</sub>	Bromoform	Tribromomethane
CH <sub>3</sub> CCl <sub>3</sub>	-	1,1,1-trichloroethane
Cl-CH <sub>2</sub> -CHCl <sub>2</sub>	-	1,1,2-trichloroethane
CCl <sub>4</sub>	Carbon tetrachloride	Tetra chloromethane
Br <sub>2</sub> CH-CHBr <sub>2</sub>	Acetylene tetra bromide	1,1,2,2-tetrabromoethane
ClCH <sub>2</sub> -CCl <sub>3</sub>	-	1,1,1,2-tetrachloroethane

**2. Alcohols or Alkanols:-** Alcohols are classified as monohydric, dihydric, trihydric and polyhydric according as their molecules contain one, two, three and many hydroxyl groups respectively. Since presence of two or more hydroxyl groups on the same carbon atom makes the molecules unstable, therefore, in di, tri, and polyhydric alcohols, each hydroxyl group is present on a different carbon atom.

**(a) Monohydric alcohols:-** General formula: C<sub>n</sub>H<sub>2n+1</sub>HO where n=1,2,3,.....ect. or R-OH where R is any alkyl group. Functional group: -OH (hydroxyl) Secondary suffix: ol  
Common name: Add the word alcohol to the name of the alkyl group, i.e., Alkyl+ alcohol = Alkyl alcohol.

IUPAC name :- Replace the terminal 'e' from the name of the corresponding alkane by the suffix 'ol', i.e., Alkane -e + ol =Alkanol. Some important examples are:

Formula	Common name	IUPAC name
CH <sub>3</sub> OH	Methyl alcohol	Methanol

CH <sub>3</sub> CH <sub>2</sub> -OH	Ethyl alcohol	Ethanol
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> -OH	n- propyl alcohol	Propan-1-ol
CH <sub>3</sub> CH(OH)CH <sub>3</sub>	Isopropyl alcohol	Propan-2-ol

**(b) Dihydric alcohols :-** General Formula : C<sub>n</sub>H<sub>2n</sub>(OH)<sub>2</sub> where n= 2,3,4, ..... etc.

Classification :- Because of their sweet taste, dihydric alcohols are called glycols. Depending upon the relative position of the two hydroxyl groups, they are further classified as α,β,γ,ω glycols etc. Thus α- glycol is 1,2 -glycol, β- glycol is 1,3-glycol and ω- glycol is one in which the two - OH groups are attached to the terminal carbon atoms of the chain.

Common names:- α-glycols are named as by adding word glycol to the alkylene. β,γ,ω -glycols are named as polymethylene glycol.

IUPAC name:- add the suffix 'diol' to the name of the alkane containing the same number of carbon atoms as the diol. Alkane + diol =Alkanediol  
The position of the two hydroxyl group is indicated by Arabic numerals.

Examples are ;

Formula	Common name	IUPAC name
HO-CH <sub>2</sub> -CH <sub>2</sub> OH	Ethylene glycol	Ethane-1,2-diol
CH <sub>3</sub> CHOHCH <sub>2</sub> OH	Propylene glycol	Propane-1,2-diol
HOCH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH	Trimethylene glycol	Propane-1,3-diol

**(c) Trihydric alcohol:-** General formula : C<sub>n</sub>H<sub>2n-1</sub>(OH)<sub>3</sub>  
IUPAC name: Add the suffix 'triol' to the name of the alkane containing the same number of carbon atoms as the triol. Alkane + triol = Alkanetriol. The position of the hydroxyl group is indicated by Arabic numerals. Examples are

Formula	Common name	IUPAC name
OHCH <sub>2</sub> -CHOH-CH <sub>2</sub> OH	Glycerol or glycerin	Propane-1,2,3-triol

3. Ethers or Alkoxyalkane:- General formula: R-O-R' where R and R' are same or different alkyl groups .If R=R , ethers are called simple ethers and if R≠R' , then ethers are mixed ethers. Functional group: -O- Secondary prefix : Alkoxy

Common name:- In case of mixed ethers, add the word ether to the names of the alkyl group arranged in alphabetical order. In case of simple ethers, the numerical prefix 'di' is added to the name of the alkyl group followed by the word ether.

IUPAC name:- In the IUPAC system ,ethers are called alkoxyalkanes. The smaller alkyl group forms a part of the alkoxy group while the bigger alkyl group forms a part of the alkane. The names of the ethers are then derived by adding the suffix alkoxy to the name of the alkane i.e., Alkoxy +alkane= Alkoxyalkane.

Examples are:-

Formula	Common name	IUPAC name
CH <sub>3</sub> -O-CH <sub>3</sub>	Dimethyl ether	Methoxymethane
CH <sub>3</sub> -O-CH <sub>2</sub> CH <sub>3</sub>	Ethyl methyl ether	Methoxyethane
CH <sub>3</sub> CH <sub>2</sub> -O-CH <sub>2</sub> CH <sub>3</sub>	Diethyl ether	Ethoxyethane

4. **Monocarboxylic acids or Alkanoic Acids** : General formula: C<sub>n</sub>H<sub>2n+1</sub>COOH where n= 0,1,2,3,4..... etc. or R-COOH where R=H or any alkyl group Functional

group :  $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}-\text{OH} \end{array}$  (carboxyl) secondary suffix: oic acid  
Common name: - These are derived from the name of the plant or animal from which they were first isolated.

IUPAC name :- Replace terminal 'e' from the name of the corresponding alkane by the suffix oic acid i.e., Alkane-e + ioc acid = Alkanaoic acid.

Some important examples are :

Formula	Common name	IUPAC name
H-COOH	Formic acid	Methanoic acid
CH <sub>3</sub> COOH	Acetic acid	Ethanoic acid
CH <sub>3</sub> CH <sub>2</sub> COOH	Propionic acid	Propanoic acid
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> COOH	n-Butyric acid	Butanoic acid
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> -COOH	n-valeric acid	Pentanoic acid

5. **Aldehydes or Alkanals**:- General formula : C<sub>n</sub>H<sub>2n+1</sub>CHO where n=0,1,2,3,..... etc. or R-CHO where R=H or

any alkyl group Functional group :  $\begin{array}{c} \text{O} \\ \parallel \\ -\text{C}-\text{H} \end{array}$   
(aldehyde) Secondary suffix : -al

Common name :- Acetic acid -ic acid + aldehyde = Acetaldehyde.

IUPAC name :- Alkane -e + al =Alkanal

Examples are:-

Formula	Common name	IUPAC name
H-COOH	Formaldehyde	Methanal
CH <sub>3</sub> -CHO	Acetaldehyde	Ethanal
CH <sub>3</sub> CH <sub>2</sub> -CHO	Propionaldehyde	Propanal
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> -CHO	n-butyraldehyde	Butanal

6. **Ketones or Alkanones**:- General formula: C<sub>n</sub>H<sub>2n+1</sub>CO C<sub>n</sub>H<sub>2n+1</sub> where n= 1,2,3, ..... etc. R-CO-R' where R and R' , may be same or different alkyl groups . if R=R' , ketones are called simple ketones and if R≠ R' , ketones are called mixed ketones . Functional group : >C=O (ketonic ) Secondary suffix: one

Common name :- in case of mixed ketones , name the alkyl groups in alphabetical order and then add the word ketone . In case of simple ketones , the numerical prefix 'di' is used before the name of the alkyl group.

IUPAC name :- Replace terminal 'e' from the name of the corresponding alkane by the suffix 'one' i.e., Alkane - e + one =Alkanone

Some example are:

Formula	Common name	IUPAC name
CH <sub>3</sub> -CO-CH <sub>3</sub>	Dimethyl ketone or Acetone	Propanone
CH <sub>3</sub> -CO-CH <sub>2</sub> CH <sub>3</sub>	Ethyl methyl ketone	Butan-2-one
CH <sub>3</sub> -CO-CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	Methyl n-propyl ketone	Pentan-2-one
CH <sub>3</sub> CH <sub>2</sub> -CO-CH <sub>2</sub> CH <sub>3</sub>	Dimethyl ketone	Pentan-3-one

7. **Acid chloride or Acyl chloride or Alkanoyl chloride**:- General formula : RCOCl where R=H or any alkyl group .

Functional group:



Secondary suffix: oyl chloride

Common name : Replace 'ic acid' from the common names of the corresponding acid by 'yl chloride' . Acetic acid -ic acid + yl chloride = Acetyl chloride

IUPAC name: Replace terminal 'e' from the name of the corresponding alkane by the suffix 'oyl chloride' i.e., Alkane -e +oyl chloride = Alkanoyl chloride

For example:

Formula	Common name	IUPAC name
H-COCl (unstable)	Formyl chloride	Methanoyl chloride
CH <sub>3</sub> .COCl	Acetyl chloride	Ethanoyl chloride
CH <sub>3</sub> CH <sub>2</sub> -COCl	Propionyl chloride	Propanoyl chloride
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> -COCl	n-Butyryl chloride	Butanoyl chloride

**8. Acid anhydrides** :- General formula: R-CO-O-CO-R' or (RCO)<sub>2</sub>O where R or R' may be same or different alkyl group.

Functional group:



Secondary suffix: anhydride

Common or IUPAC names: - Replace the word acid from the common or IUPAC name of the corresponding acid by the word anhydride. Symmetrical anhydrides of substituted carboxylic acids are named by adding prefix 'bis' to the name to indicate that two identical acyl groups are present. Unsymmetrical anhydride are named by writing the names of the acid alphabetically before the word anhydride. Some important examples are:

Formula	Common name	IUPAC name
(CH <sub>3</sub> CO) <sub>2</sub> O	Acetic anhydride	Ethanoic anhydride
(CH <sub>3</sub> CH <sub>2</sub> CO) <sub>2</sub> O	Propionic anhydride	Propanoic anhydride
(ClCH <sub>2</sub> CO) <sub>2</sub> O	Bis(Chloroacetic anhydride)	Bis(Chloroethanoic anhydride)
HCO-O-COCH <sub>3</sub>	Acetic formic anhydride	Ethanoic methanoic anhydride

**9. Ester**:-General formula : R-COOR' where R=H or any alkyl group while R' is always an alkyl group

Functional group:  $\text{—}\overset{\text{O}}{\parallel}{\text{C}}\text{—O—R'}$  (ester)

Secondary prefix: alkyl, Secondary suffix: oate

Common or IUPAC names: - Write the name of the alkyl group before the common or IUPAC name of the parent acid with its terminal 'ic acid' replace by 'oate'

Some important examples are:

Formula	Common name	IUPAC name
H-COOCH <sub>3</sub>	Methyl formate	Methyl methanoate
H-COOC <sub>2</sub> H <sub>5</sub>	Ethyl formate	Ethyl methanoate
CH <sub>3</sub> -COOCH <sub>3</sub>	Methyl acetate	Methyl ethanoate
CH <sub>3</sub> -COOC <sub>2</sub> H <sub>5</sub>	Ethyl acetate	Ethyl ethanoate

**10. Acid amides or Alkanamides** : General formula : RCONH<sub>2</sub> where R=H or any alkyl group

Functional group : (amide)



Secondary suffix : amide

Common name : Replace 'ic acid' from the common name of the corresponding acid by the secondary suffix amide.

IUPAC name : - Replace the terminal 'e' from the name of the corresponding alkane by the suffix amide, i.e., Alkane -e + amide = Alkanamide.

Some examples are:

Formula	Common name	IUPAC name
H-CONH <sub>2</sub>	Formamide	Methanamide
CH <sub>3</sub> -CONH <sub>2</sub>	Acetamide	Ethanamide
CH <sub>3</sub> -CH <sub>2</sub> -CONH <sub>2</sub>	propionamide	Propanamide

**11. Primary Amines** :- General formula : R-NH<sub>2</sub> where R is any alkyl group. Functional group : -NH<sub>2</sub> (amino) Secondary suffix : amine

Common names : (i) Add the word amine to the name of the alkyl group, i.e., alkyl + amine = Alkylamine (ii) Attach the prefix amino to the name of the corresponding alkane i.e., Amino + alkane = Aminoalkane. IUPAC name: Replace the terminal 'e' from the name of the corresponding alkane by the

secondary suffix amine i.e., Alkane –e + amine = Alkanamine.

Some important example are :

Formula	Common name	IUPAC name
CH <sub>3</sub> -NH <sub>2</sub>	Methylamine or Aminomethane	Methanamine
CH <sub>3</sub> CH <sub>2</sub> -NH <sub>2</sub>	Ethylamine or Aminoethane	Ethanamine
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub>	n-propylamine or 1-aminopropane	Propan-1-amine or Propanamine

**12. Secondary Amine:-** General formula : R-NH-R' where R and R' may be same or different alkyl groups.

Functional group : >NH (imino) Secondary prefix : N-alkyl , Secondary suffix : amine

Common name : - (i) Name the alkyl group in alphabetical order and then add the word amine. In case of two alkyl groups are the same , the numerical prefix 'di' is used before the name of the alkyl group . (ii) Add the prefix N-alkyl before the name of the aminoalkane; the smaller alkyl group forming a part of N-alkyl group while the larger alkyl group form a part of the alkane.

IUPAC name : - Add the prefix N-alkyl to the name of the alkanamine corresponding to the larger alkyl group, i.e., N-alkyl + alkanamine = N-alkylalkanamine.

Some important example are:

Formula	Common name	IUPAC name
CH <sub>3</sub> NHCH <sub>3</sub>	Dimethylamine or N-methylaminomethane	N-Methylmethanamine
CH <sub>3</sub> CH <sub>2</sub> NHC <sub>2</sub> H <sub>5</sub>	Ethyl methylamine or N-methyl aminoethane	N-Methylethanamine
(CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> NH	Diethylamine or N-ethylaminoethane	N-Ethylethanamine

**13. Tertiary amines :-** General formula :

where R,R',R'' may be same or different alkyl groups or two of them may be same while the third may be different. Secondary prefix: N-alkyl, N-alkyl



Functional group :  $\begin{array}{c} | \\ -N- \\ | \end{array}$  (tertiary nitrogen),  
Secondary suffix : amine

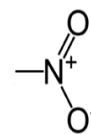
Common name: (i) name the alkyl groups in alphabetical order and add the suffix amine. If two or all the three alkyl groups are same ,the numerical prefixes 'di' and tri are respectively used. (ii) Add the prefixes N-alkyl and N-alkyl (smaller alkyl group) to the name of the amino alkane corresponding to the largest alkyl group.

IUPAC name: Add the prefixes N-alkyl and N-alkyl (smaller alkyl groups ) to the name of the alkanamine corresponding to the largest alkyl group.

Some important examples are:-

Formula	Common name	IUPAC name
(CH <sub>3</sub> ) <sub>3</sub> N	Trimethylamine or N,N-dimethylaminomethane	N,N-dimethylmethanamine
CH <sub>3</sub> CH <sub>2</sub> N(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	Ethyl dimethylamine or N,N-dimethylaminoethane	N,N-dimethylethanamine
(CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> N-CH <sub>3</sub>	Diethylmethylamine or N-ethyl N-methylaminoethane	N-Ethyl,N-methylethanamine
(CH <sub>3</sub> CH <sub>2</sub> ) <sub>3</sub> N	Triethylamine or N,N-diethyl aminoethane	N,N-diethylethanamine

**14. Nitroalkanes :** General formula : R-NO<sub>2</sub> where R is any alkyl group .



Functional group: (nitro)

Secondary prefix: Nitro

Common name :- there are no common names for nitroalkane.

IUPAC name :- Add the secondary prefix 'nitro' to the name of the alkane, i.e. , nitro + alkane = Nitroalkane

Some important examples are :

Formula	IUPAC name	Formula	IUPAC name
CH <sub>3</sub> -NO <sub>2</sub>	Nitromethane	CH <sub>3</sub> CH(CH <sub>3</sub> )CH <sub>2</sub> -NO <sub>2</sub>	2-Nitropropane
CH <sub>3</sub> CH <sub>2</sub> -NO <sub>2</sub>	Nitroethane	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> -NO <sub>2</sub>	1-Nitrobutane
CH <sub>3</sub> CH <sub>2</sub> C	1-	CH <sub>3</sub> CH(NO <sub>2</sub> )	2-

H <sub>2</sub> -NO <sub>2</sub>	Nitropropane	CH <sub>2</sub> CH <sub>3</sub>	Nitrobutane
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- 15. Alkyl nitrites :-** General formula :- R-O-N=O where R is any alkyl group . Functional group : -O-N=O (nitrite)  
Secondary suffix : Nitrite  
Common Name :- Add the secondary suffix nitrite to the **name** of the alkyl group .i.e., Alkyl + nitrite =Alkyl nitrite.  
IUPAC name :- There are no IUPAC name for alkyl nitrite.

Examples are :-

Formula	Common name	Formula	Common name
CH <sub>3</sub> -O-N=O	Methyl nitrite	CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> -O-N=O	n-propyl nitrite
CH <sub>3</sub> CH <sub>2</sub> -O-N=O	Ethyl nitrite	CH <sub>3</sub> CH(ON O)CH <sub>3</sub>	Isopropyl nitrite

- 16. Alkyl cyanide or Alkanenitrile :-** General formula : R-C≡N where R is any alkyl group.  
Functional group : -C≡N (cyano or nitrile)  
Secondary suffix : nitrile

Common name : - (1) Add the suffix cyanide to the name of the alkyl group, i.e., Alkyl + cyanide = alkyl cyanide . (2) Replace 'ic acid' from the common name of the corresponding acid by the suffix 'onitrile. Acetic acid – ic acid + onitrile = Acetonitrile,

however , in case of propionic acid, onic acid is replace by 'onitrile' . Propionic acid –onic acid + onitrile= Propionitrile.

IUPAC name : - Add the suffix 'nitrile' to the name of the alkane containing the same number of carbon atoms as the alkyl cyanide. i.e., Alkane + nitrile =Alkanenitrile .

Some important examples are :

Formula	Common name	IUPAC name
CH <sub>3</sub> CN	Methyl cyanide or Acetonitrile	Ethanenitrile
CH <sub>3</sub> CH <sub>2</sub> CN	Ethyl cyanide or Propionitrile	Propanenitrile
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CN	n-Propyl cyanide or n-Butyronitrile	butanenitrile

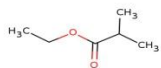
- 17. Isocyanide or Isonitrile :-** General formula : R-N≡C where R is any alkyl group .  
Functional group : -N≡C ( isocyanide or isonitrile)  
Secondary suffix : isocyanide or isonitrile  
Common name : Add the suffix isocyanide or carbylamines to the name of the alkyl group.

Formula	Common name
CH <sub>3</sub> -N≡C	Methyl isocyanide or methyl carbylamine or methyl isonitrile
CH <sub>3</sub> CH <sub>2</sub> NC	Ethyl isocyanide or ethyl carbylamines or ethyl isonitrile

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## ASSIGNMENT-I

- The IUPAC name of CH<sub>3</sub>COCH(CH<sub>3</sub>)<sub>2</sub> is :  
[A] 3-Methyl -2-Butanone  
[B] Isopropyl methyl ketone  
[C] 2- methyl-3-Butanone  
[D] 4-Methyl isopropyl ketone
- The general formula which represents the homologous series of alkanols is:  
[A] C<sub>n</sub>H<sub>2n</sub>O [B] C<sub>n</sub>H<sub>2n+1</sub>O  
[C] C<sub>n</sub>H<sub>2n+2</sub> O [D] C<sub>n</sub>H<sub>2n</sub>O<sub>2</sub>
- The IUPAC name of ether: CH<sub>3</sub>-O-C<sub>2</sub>H<sub>5</sub> is  
[A] Methyl ethyl ether [B] Ethoxy methane  
[C] Methoxy ethane [D] Ethyl methyl ether
- The correct IUPAC name of Acetonitrile is :  
[A] Ethanenitrile [B] Cyanomethane  
[C] Methanenitrile [D] Cyanoethane
- The IUPAC name of CH<sub>3</sub>COOC<sub>2</sub>H<sub>5</sub> will be:  
[A] Ethyl acetate [B] Ethyl ethanoate  
[C] Methyl propanoate [D] none of these
- The IUPAC name of the compound, CH<sub>3</sub>CH<sub>2</sub>COOCH<sub>3</sub> is:  
[A] Methoxy propanone [B] Methoxypropanal  
[C] Methylpropanoate [D] Methoxy ethyl ketone
- The IUPAC name of following compound is:



- [A] Ethyl-2-methylpropanoate
- [B] 2-Methyl ethoxy propanone
- [C] Ethoxy propanoate
- [D] 2-methyethoxy propanone

Answers to Assignments  
1. [A] 2. [C] 3. [C] 4. [A] 5. [B] 6. [C] 7. [A]



*Author is M.Sc. (Chem.), M.Ed. and Advanced Diploma in German Language (Gold Medallist). She retired as a Principal, Govt. School Haryana, has 3-1/2 years' experience in teaching Chemistry and distance teaching through lectures on Radio and Videos. She has volunteered to complement mentoring of students for Chemistry through Online Web-enabled Classes of this initiative.  
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