

विध्न विचारत भीरु जन, नहीं आरम्भे काम, विपति देख छोड़े तुरंत मध्यम मन कर श्याम।  
पुरुष सिंह संकल्प कर, सहते विपति अनेक, 'बना' न छोड़े ध्येय को, रघुबर राखे टेक।।

*रचित: मानव धर्म प्रणेता*

*सद्गुरु श्री रणछोड़दासजी महाराज*

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**Topic : NOMENCLATURE**

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7. 34 Yrs. Que. from IIT-JEE
8. 10 Yrs. Que. from AIEEE

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## IUPAC

Nomenclature according to IUPAC system involves use of following terms:

- (i) Word root : The word root represents the number of C atoms in parent chain.

No. of C atom	W.R.	No. of C atom	W.R.
1	Meth	8	Oct
2	Eth	9	Non
3	Prop.	10	Dec
4	But	11	Undec
5	Pent	12	Dodec
6	Hex	13	Tridec
7	Hep		

- (ii) Primary suffix : Primary suffix is used to indicate saturation or unsaturation in carbon chain.

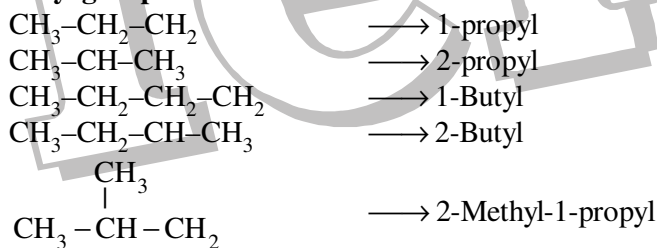
While writing name, primary suffix is added to word root.

Nature of C chain	Primary suffix
(1) Saturated C chain	ane
(2) Unsaturated C chain	
C=C	ene
C≡C	yne
2 C=C	diene
2 C≡C	diyne

- (iii) Secondary suffix : Secondary suffix is used to indicate functional group in organic comp. It is added primary suffix by dropping its terminal "e".

Prefix : The part of the name C appears before the word root is called prefix. Different prefixes are used for different categories of group as:

- (a) **Alkyl groups:**



- (b) In IUPAC system, for nomenclature some groups are not considered as functional group but treated as substituent. These functional groups are always indicated by prefixes instead of secondary suffixes.

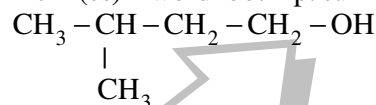
-NO <sub>2</sub>	Nitro
-OR	Alkoxy
-Cl	Chloro
-Br	Bromo
-I	Iodo
-F	Fluoro
-N=O	Nitroso
-NO <sub>2</sub>	Nitro
=N	Diazo

- (c) In polyfunctional compound, one of the functional group is treated as principal functional group & indicated by secondary suffix while other functional groups are treated as substituents & indicated by prefixes.

GF	O.Co.	Suffix	IUPAC Name	Prefix
R-OH	Alcohols	ol	alcohol	Hydroxy
R-SH	Thioalcohols	thiol	alkanethiol	Mercapto
R-NH <sub>2</sub>	Amines	amine	alkanamine	Amino
R-CHO	Aldehyde	al	alkanal	formyl
RCOR	Ketone	one	alkanone	Keto or oxo
RCOOH	carboxylic acid	-oic acid	alkanoic acid	Carboxy
Amides	RCONH <sub>2</sub>	amide	alkanamide	Carbamoyl
Acid halide	RCOX	oyl halide	alkanoyl halide	haloformyl
Ester	RCOOR	oate	alkylalkanoate	Carbalkoxy
Nitriles	R-C≡N	nitrile	alkanenitrile	Cyano
Isonitrile	R-NC	isonitrile	alkane isonitrile	Carbylamino

**Arrangement :**

Prefix(es) + word root + p. suffix + sec. suffix



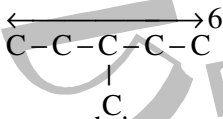
Methyl + but + an + ol

**Rules:**

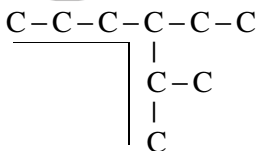
For saturated compounds:

(i) **Selection of longest chain :**

- (a) Longest continuous chain of carbon atoms is selected. This is called parent chain while all other C atoms are not included in parent chain is called side chain.

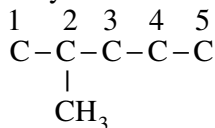


- (b) If more than one set of longest chains are possible, the chain with max. no. of substituent acts as parent chain.

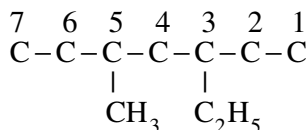


(ii) **Numbering of selected chain :**

- (a) The selected chain is numbered from one end to other. The numbers are called locants. Numbering is done in such a way that lowest no. is assigned to side chain or substituent



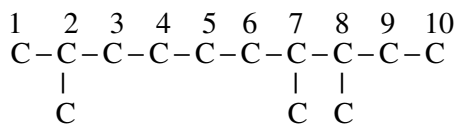
- (b) If two different alkyl groups or substituents are at same position from opposite ends, lowest no. is given in alphabetical order.



- (c) If two different substituents are at same position from opp. ends, lowest no. is assigned in order of their alphabets.



- (d) The numbering is done in such a way that the substituted carbon atoms have the lowest possible numbers. Where series of locants containing the same no. of terms are compared term by term, the chosen series should contain the number on the occasion of first difference.



(iii) **Arrangement of prefixes :**

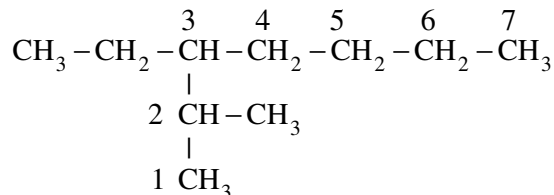
- (a) Side chain or substituent group are added as prefix with its locant in alphabetical order.



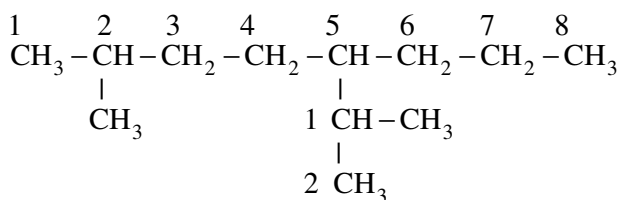
- (b) If more than one similar alkyl group or substituents are present then di, tri, tetra are used.



- (c) In case side chain is also branched, it is also numbered from carbon atom attached to main chain & is generally written in brackets.

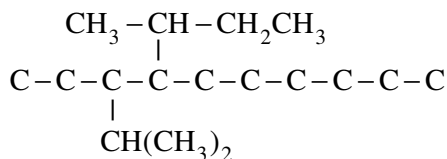


**3-ethyl-2-methylheptane**



**2-methyl-5-(1-methyl ethyl) octane**

The use of iso & related common prefixes for describing alkyl group as long as these are not further substituted are also allowed by IUPAC nomenclature. While writing name in alphabetical order prefixes iso & neo are considered to be part of fundamental name of alkyl group. However sec. & tert are not considered to be part of fundamental name.



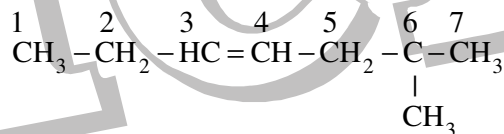
**3-Ethyl-2-methyl-4-(1-methylpropyl) decane**

*For unsaturated hydrocarbon :*

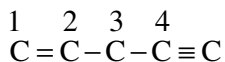
- (i) Select the longest possible carbon chain having maximum no. of unsaturated carbon atoms or max. no. of double or triple bonds, even if prior rule is violated.



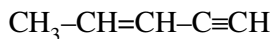
- (ii) Lowest no. is assigned to first unsaturated carbon even if prior rule is violated.



- (iii) If double & triple bonds are at same position from either ends, lowest no is assigned to double bond



- (iv) If both alkene & alkyne group are present, the org. compound is named as derivative of alkyne rather than alkene.



**Pent-3-en-1-yne**

In some cases all the double & triple bonds present in molecule can't be included in longest chain. In such cases following prefixes.

$\text{CH}_2 =$   
Methylene

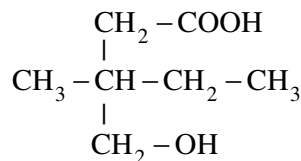
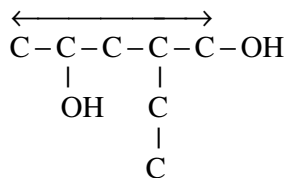
$\text{CH}_3-\text{CH} =$   
Ethylidene

$\text{CH}\equiv\text{C}-$   
Ethyne

$\text{CH}_2=\text{CH}-$   
Ethenyl

**For functional groups :**

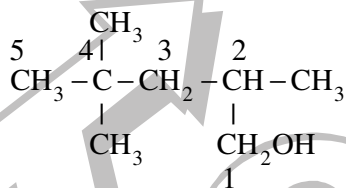
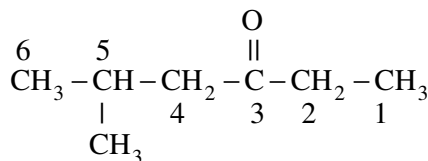
- (i) Select the longest possible carbon chain having senior functional group.



- (ii) The carbon atom of functional group is to be included in deciding the longest carbon chain.

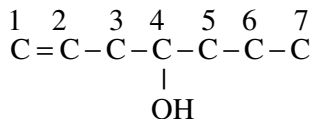
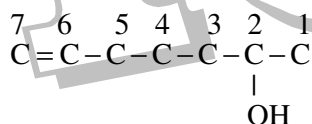


- (iii) The lowest no is assigned to functional group even if prior rules are violated.

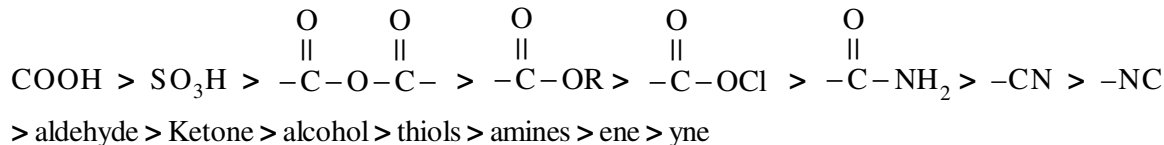


- (iv) The order of numbering a carbon chain, thus follows the order:

- Functional group
- Unsaturation
- Substituents & side chains



- (v) If more than 1 functional group; then choice of principal functional group is made on the basis following order of preference:



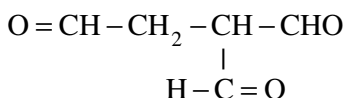
**EXERCISE - I**

Q.1 How many 1° carbon atom will be present in a simplest hydrocarbon having two 3° and one 2° carbon atom?  
(A) 3 (B) 4 (C) 5 (D) 6

Q.2 C<sub>3</sub>H<sub>6</sub>Br<sub>2</sub> can show:  
(A) Two gem dibromide (B) Two vic dibromide  
(C) Two tert. dibromo alkane (D) Two sec. dibromo alkane

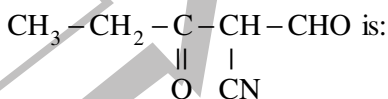
Q.3 The IUPAC name of the compound CH<sub>3</sub>CH = CHCH = CHC ≡ CCH<sub>3</sub> is:  
(A) 4,6-octadiene-2-yne (B) 2,4-octadiene-6-yne  
(C) 2-octyn-4,6-diene (D) 6-octyn-2,4-diene

Q.4 The correct IUPAC name of the following compound is:



(A) 1,1-diformyl propanal (B) 3-formyl butanedial  
(C) 2-formyl butanedial (D) 1,1,3-ethane tricarbaldehyde

Q.5 The correct IUPAC name of compound:

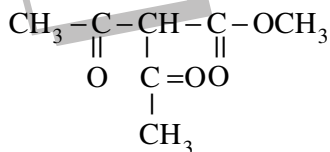


(A) 2-cyano-3-oxopentanal (B) 2-formyl-3-oxopentanenitrile  
(C) 2-cyano-1,3-pentanedione (D) 1,3-dioxo-2-cyanopentane

Q.6 All the following IUPAC names are correct except:

(A) 1-chloro-1-ethoxy propane (B) 1-amino-1-ethoxypropane  
(C) 1-ethoxy-2-propanol (D) 1-ethoxy-1-propanamine

Q.7 IUPAC name of:



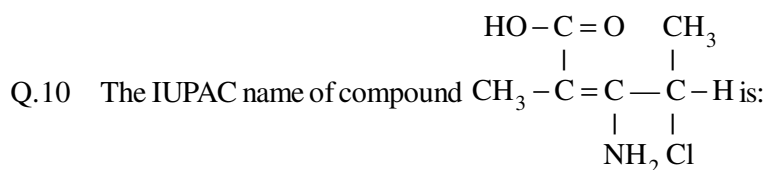
(A) Methyl-2,2 acetyl ethanoate (B) 2,2 acetyl-1-methoxy ethanone  
(C) Methyl-2-acetyl-3-oxobutanoate (D) None

Q.8 The IUPAC name of β-ethoxy-α-hydroxy propionic acid (trivial name) is:

(A) 1,2-dihydroxy-1-oxo-3-ethoxy propane (B) 1-carboxy-2-ethoxy ethanol  
(C) 3-Ethoxy-2-hydroxy propanoic acid (D) All above

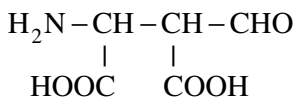
Q.9 The IUPAC name of compound  $\text{CH}_3 - \overset{\text{O}}{\parallel}{\text{C}} - \underset{\text{CH}_3}{\text{CH}} - \underset{\text{CHO}}{\text{CH}} - \underset{\text{CH}_3}{\text{CH}} - \text{CH}_3$  is:

(A) 3,5-Dimethyl-4-Formyl pentanone (B) 1-Isopropyl-2-methyl-4-oxo butanal  
(C) 2-Isopropyl-3-methyl-4-oxo pentanal (D) None of the above



- (A) 2-amino-3-chloro-2-methyl-2-pentenoic acid  
 (B) 3-amino-4-chloro-2-methyl-2-pentenoic acid  
 (C) 4-amino-3-chloro-2-methyl-2-pentenoic acid  
 (D) All of the above

Q.11 The IUPAC name of the structure is:



- (A) 3-amino-2-formyl butane-1, 4-dioic acid (B) 3-amino-2, 3-dicarboxy propanal  
 (C) 2-amino-3-formyl butane-1, 4-dioic acid (D) 1-amino-2-formyl succinic acid

Q.12  $\text{C}_4\text{H}_6\text{O}_2$  does not represent:

- (A) A diketone (B) A compound with two aldehyde  
 (C) An alkenoic acid (D) An alkanolic acid

Q.13 Esters are functional isomers of:

- (A) Hydroxy aldehyde (B) Ketone (C) Diketone (D) Diols

Q.14 How many carbons are in simplest alkyne having two side chains?

- (A) 5 (B) 6 (C) 7 (D) 8

Q.15 Which of the following is not correctly matched:



Q.16 Which of the following pairs have absence of carbocyclic ring in both compounds?

- (A) Pyridine, Benzene (B) Benzene, Cyclohexane  
 (C) Cyclohexane, Furane (D) Furane, Pyridine

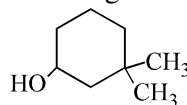
Q.17 The commercial name of trichloroethene is:

- (A) Westron (B) Perclene (C) Westrosol (D) Orlone



- Q.18 The compound which has one isopropyl group is:  
 (A) 2,2,3,3-tetramethyl pentane (B) 2,2-dimethyl pentane  
 (C) 2,2,3-trimethyl pentane (D) 2-methyl pentane
- Q.19 How many secondary carbon atoms does methyl cyclopropane have?  
 (A) None (B) One (C) Two (D) Three
- Q.20 The IUPAC name of the compound  $\text{CH}_2 - \text{CH} - \text{CH}_2$  is:  
 $\begin{array}{ccc} | & | & | \\ \text{OH} & \text{OH} & \text{OH} \end{array}$   
 (A) 1,2,3-tri hydroxy propane (B) 3-hydroxy pentane-1,5-diol  
 (C) 1,2,3-hydroxy propane (D) Propane-1,2,3-triol
- Q.21 As per IUPAC rules, which one of the following groups, will be regarded as the principal functional group?  
 (A)  $-\text{C}\equiv\text{C}-$  (B)  $-\text{OH}$  (C)  $-\text{C}-$  (D)  $-\text{C}-\text{H}$   
 $\begin{array}{c} || \\ \text{O} \end{array}$   $\begin{array}{c} || \\ \text{O} \end{array}$
- Q.22 Which of the following is the first member of ester homologous series?  
 (A) Ethyl ethanoate (B) Methyl ethanoate (C) Methyl methanoate (D) Ethyl methanoate
- Q.23 The correct IUPAC name of 2-ethyl-3-pentyne is:  
 (A) 3-methyl hexyne-4 (B) 4-ethyl pentyne-2 (C) 4-methyl hexyne-2 (D) None of these
- Q.24 IUPAC name for the compound  $\begin{array}{c} \text{Cl} & & \text{CH}_2\text{CH}_3 \\ & \diagdown & / \\ & \text{C}=\text{C} & \\ & / & \diagdown \\ \text{H}_3\text{C} & & \text{I} \end{array}$  is  
 (A) E-3-iodo-4-chloro-3-pentene (B) E-2-chloro-3-iodo-2-pentene  
 (C) Z-2-chloro-3-iodo-2-pentene (D) Z-3-iodo-4-chloro-3-pentene
- Q.25 The IUPAC name of the compound is  $\text{CH}_3 - \text{CH} - \text{CH} - \text{NH}_2$   
 $\begin{array}{c} | \\ \text{Ph} \\ | \\ \text{CH}_3 \end{array}$   
 (A) 1-amino-1-phenyl-2-methyl propane (B) 2-methyl-1-phenyl propane-1-amine  
 (C) 2-methyl-1-amino-1-phenyl propane (D) 1-isopropyl-1-phenyl methyl amine
- Q.26 Which of the following compound is wrongly named?  
 (A)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHCOOH}$  ; 2-Chloro pentanoic acid  
 $\begin{array}{c} | \\ \text{Cl} \end{array}$   
 (B)  $\text{CH}_3\text{C}\equiv\text{CCHCOOH}$  ; 2-Methyl hex-3-enoic acid  
 $\begin{array}{c} | \\ \text{CH}_3 \end{array}$   
 (C)  $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCOCH}_3$  ; Hex-3-en-2-one  
 (D)  $\text{CH}_3 - \text{CHCH}_2\text{CH}_2\text{CHO}$  ; 4-Methyl pentanal  
 $\begin{array}{c} | \\ \text{CH}_3 \end{array}$

Q.27 The IUPAC name of the given compound is:



- (A) 1,1-dimethyl-3-hydroxy cyclohexane (B) 3,3-dimethyl-1-hydroxy cyclohexane  
(C) 3,3-dimethyl-1-cyclohexanol (D) 1,1-dimethyl-3-cyclohexanol

Q.28 The IUPAC name of  $(C_2H_5)_2NCH_2CH(CO_2H)Cl$  is:



- (A) 2-chloro-4-N-ethylpentanoic acid (B) 2-chloro-3-(N,N-diethyl amino)-propanoic acid  
(C) 2-chloro-2-oxo diethylamine (D) 2-chloro-2-carboxy-N-ethyl ethane

Q.29 The IUPAC name of the compound  $Br(Cl)CH_2CF_3$  is:

- (A) haloethane (B) 1,1,1-trifluoro-2-bromo-2-chloroethane  
(C) 2-bromo-2-chloro-1,1,1-trifluoroethane (D) 1-bromo-1-chloro-2,2,2-trifluoro ethane

Q.30 The group of hetrocyclic compounds is:

- (A) Phenol, Furane (B) Furane, Thiophene (C) Thiophene, Phenol (D) Furane, Aniline

Q.31 The correct IUPAC name of  $CH_3-CH_2-C(=CH_2)-COOH$  is:

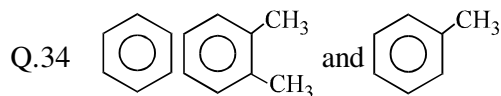
- (A) 2-methyl butanoic acid (B) 2-ethyl-2-propenoic acid  
(C) 2-carboxy-1-butene (D) None of the above

Q.32 The IUPAC name of the following structure  $(CH_3)_2C \equiv C \cdot C \cdot C(CH_3)CH(CH_3)$  is:

- (A) 3-methyl-4-hexynene-2 (B) 3-methyl-2-hexenyne-4  
(C) 4-methyl-4-hexenyne-4 (D) all are correct

Q.33 The IUPAC name of the following structure is  $[CH_3CH(CH_3)]_2C(CH_2CH_3)C(CH_3)C(CH_2CH_3)_2$

- (A) 3,5-diethyl-4,6-dimethyl-5-[1-methylethyl]-3-heptene  
(B) 3,5-diethyl-5-isopropyl-4,6-dimethyl-2-heptene  
(C) 3,5-diethyl-5-propyl-4,6-dimethyl-3-heptene  
(D) None of these



Number of secondary carbon atoms present in the above compounds are respectively:

- (A) 6,4,5 (B) 4,5,6 (C) 5,4,6 (D) 6,2,1

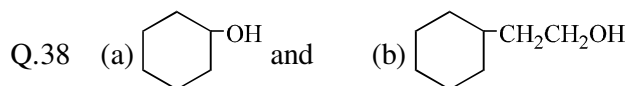
Q.35 The IUPAC name of acetyl acetone is:

- (A) 2,5-Pentane dione (B) 2,4-Pentane dione (C) 2,4-Hexane dione (D) 2,4-butane dione

Q.36 When vinyl & allyl are joined each other, we get

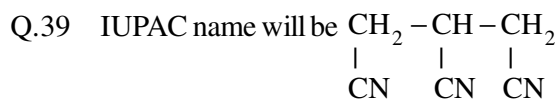
- (A) Conjugated alkadiene (B) cumulative alkadiene  
(C) Isolated alkadiene (D) Allenes

- Q.37 Glycerine is:  
 (A) Propane triol-1,2,3 (B) Propylene trialcohol  
 (C) Propyl glycol (D) Hydroxy methyl glycol



True statement for the above compounds is:

- (A) (a) is phenol while (b) is alcohol (B) Both (a) and (b) are primary alcohol  
 (C) (a) is primary and (b) is secondary alcohol (D) (a) is secondary and (b) is primary alcohol

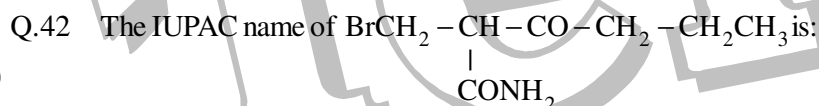


- (A) 1,2,3-Tricyano propane (B) Propane trinitrile-1,2,3  
 (C) 1,2,3-cyano propane (D) 3-cyano pentane-1,3-dinitrile

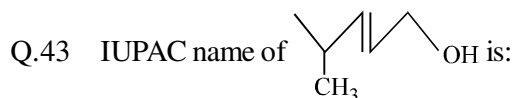
- Q.40 A substance containing an equal number of primary, secondary and tertiary carbon atoms is:  
 (A) Mesityl Oxide (B) Mesitylene (C) Maleic acid (D) Malonic acid



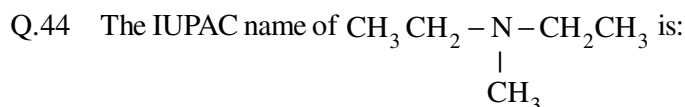
- (A) But-2-ene-2,3-diol (B) Pent-2-ene-2,3-diol  
 (C) 2-methylbut-2-ene-2,3-diol (D) Pent-3-ene-3,4-diol



- (A) 2-bromo methyl-3-oxo hexanamide (B) 1-bromo-2-amino-3-oxo hexane  
 (C) 1-bromo-2-amino-n-propyl ketone (D) 3-bromo-2-propyl propanamide

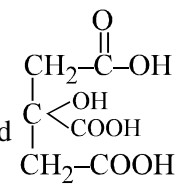


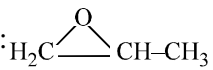
- (A) 5-methyl hexanol (B) 2-methyl hexanol  
 (C) 2-methyl hex-3-enol (D) 4-methyl pent-2-en-1-ol



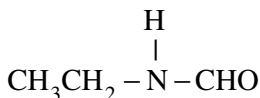
- (A) N-methyl-N-ethylethyl amine (B) diethylmethyl amine  
 (C) N-ethyl-N-methylethyl amine (D) methyl diethyl amine

- Q.45 The molecular formula of the first member of the family of alkenynes and its name is given by the set  
 (A)  $\text{C}_3\text{H}_2$ , alkene (B)  $\text{C}_5\text{H}_6$ , 1-penten-3-yne  
 (C)  $\text{C}_6\text{H}_8$ , 1-hexen-5-yne (D)  $\text{C}_4\text{H}_4$ , butenyne

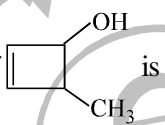
- Q.46 The IUPAC name of compound  (A) 1,2,3-tricarboxy-2,1-propane (B) 3-Carbox-3-hydroxy-1,5-pentane dioic acid  
(C) 3-hydroxy-3-Carboxy-1,5-pentane dioic acid (D) None

- Q.47 The IUPAC name of the compound:  (A) Propylene Oxide (B) 1,2-Oxo propane  
(C) 1,2-Epoxy propane (D) 1,2-Propoxide

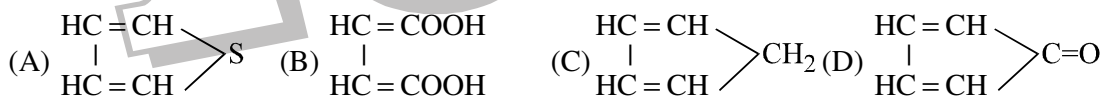
- Q.48 One among the following is the correct IUPAC name of the compound



- (A) N-Formyl aminoethane (B) N-Ethyl formyl amine  
(C) N-Ethyl methanamide (D) Ethylamino methanal
- Q.49 Which among the following is the correct IUPAC name of isoamylene:  
(A) 1-Pentene (B) 2-Methyl-2-butene (C) 3-Methyl-1-butene (D) 2-Methyl-1-butene

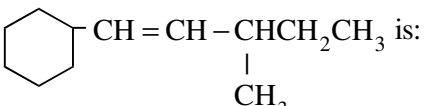
- Q.50 The IUPAC name of  is (A) 3-Methyl cyclo-1-butene-2-ol (B) 4-Methyl cyclo-2-butene-1-ol  
(C) 4-Methyl cyclo-1-butene-3-ol (D) 2-Methyl cyclo-3-butene-1-ol

- Q.51 Which of the following is a heterocyclic compound



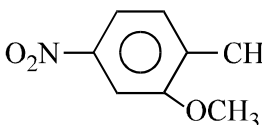
- Q.52 The number of primary, secondary and tertiary amines possible with the molecular formula  $\text{C}_3\text{H}_9\text{N}$  is:  
(A) 1,2,2 (B) 1,2,1 (C) 2,1,1 (D) 3,0,1

- Q.53 The IUPAC name of  $\text{C}_6\text{H}_5\text{CH}=\text{CH}-\text{COOH}$  is:  
(A) cinnamic acid (B) 1-phenyl-2-carboxy ethane  
(C) 3-phenyl prop-2-enoic acid (D) dihydroxy-3-phenyl propionic acid

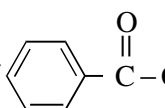
- Q.54 The IUPAC name of  is:  
(A) 1-cyclohexyl-3-methyl-1-pentene (B) 3-methyl-5-cyclohexyl-pent-ene  
(C) 1-cyclohexyl-3-ethyl-but-1-ene (D) 1-cyclohexyl-3,4-dimethyl-but-1-ene

Q.55 The IUPAC name of  $\text{CH}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$  is:

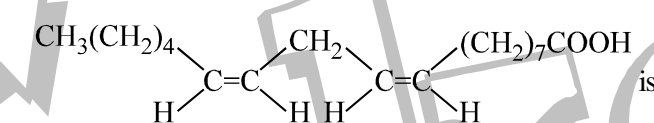
- (A) 1-acetoxy acetic acid (B) 2-acetoxy ethanoic acid  
(C) 2-ethanoyl oxyacetic acid (D) 2-ethanoyl oxyethanoic acid

Q.56 The IUPAC name of  is:

- (A) 2-methoxy-4-nitro benzaldehyde (B) 4-nitro anisaldehyde  
(C) 3-methoxy-4-formyl nitro benzene (D) 2-formyl-4-nitro anisole

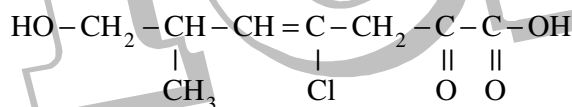
Q.57 The IUPAC name of  is:

- (A) phenyl ethanone (B) methyl phenyl ketone  
(C) acetophenone (D) phenyl methyl ketone

Q.58 The IUPAC name of  is:

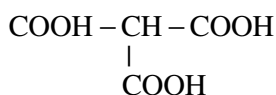
- (A) cis-cis-9, 12-octadecan dienoic acid (B) cis-trans-9, 12-octadecan dienoic acid  
(C) 9,10-octa decadienoic acid (D) 9,14-octa decadienoic acid

Q.59 The suffix of the principal group, the prefixes for the other groups and the name of the parent in the structure



- (A) -oic acid, chloro, hydroxy, oxo, methyl, 4-heptene  
(B) -oic acid, chloro, hydroxy, methyl, oxo, 4-heptene  
(C) -one, carboxy, chloro, methyl, hydroxy, 4-heptene  
(D) -one, carboxy, chloro, methyl, hydroxy, 4-heptene

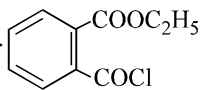
Q.60 The IUPAC name of compound



- (A) Tricarboxy methane (B) Propane trioic acid  
(C) Tributanoic acid (D) 2-carboxy propanedioic acid

Q.61 The IUPAC name of  $\text{OHC}-\text{CH}_2-\text{CH}_2-\underset{\text{CH}_2-\text{CHO}}{\text{CH}}-\text{CH}_2-\text{CHO}$  is:

- (A) 4,4-di(formylmethyl) butanal (B) 2-(formylmethyl) butane-1, 4-dicarbaldehyde  
(C) hexane-3-acetal-1, 6-dial (D) 3-(formylmethyl) hexane-1, 6-dial

Q.62 The IUPAC name of  is:

- (A) 2-chlorocarbonyl ethylbenzoate (B) 2-carboxyethyl benzoyl chloride  
(C) ethyl-2-(chlorocarbonyl) benzoate (D) ethyl-1-(chlorocarbonyl) benzoate

Q.63 Which of the following is crotonic acid:

- (A)  $\text{CH}_2=\text{CH}-\text{COOH}$  (B)  $\text{C}_6\text{H}_5-\text{CH}=\text{CH}-\text{COOH}$   
(C)  $\text{CH}_3-\text{CH}=\text{CH}-\text{COOH}$  (D)  $\begin{array}{c} \text{CH} - \text{COOH} \\ || \\ \text{CH} - \text{COOH} \end{array}$

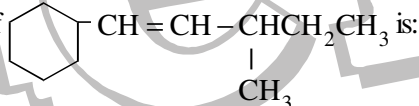
Q.64  $\text{CH}_3 - \text{O} - \text{C} - \text{CH}_2 - \text{COOH}$   
 $\quad \quad \quad ||$   
 $\quad \quad \quad \text{O}$

The correct systematic name of the above compound is:

- (A) 2-acetoxy ethanoic acid (B) 2-methoxy carbonyl ethanoic acid  
(C) 3-methoxy formyl ethanoic acid (D) 2-methoxy formyl acetic acid

Q.65 Structural formula of isopropyl methanoate is:

- (A)  $\begin{array}{c} \text{CH}_3 - \text{C} - \text{O} - \text{CH} - \text{CH}_3 \\ || \quad | \\ \text{O} \quad \text{CH}_3 \end{array}$  (B)  $\begin{array}{c} \text{H} - \text{C} - \text{O} - \text{CH}_2 - \text{CH}_3 \\ || \quad | \\ \text{O} \quad \text{CH}_3 \end{array}$   
(C)  $\begin{array}{c} \text{CH}_3 - \text{C} - \text{O} - \text{CH}_2 - \text{CH}_2 \\ || \quad | \\ \text{O} \quad \text{CH}_3 \end{array}$  (D)  $\begin{array}{c} \text{H} - \text{C} - \text{O} - \text{CH} - \text{CH}_3 \\ || \quad | \\ \text{O} \quad \text{CH}_3 \end{array}$

Q.66 The IUPAC name of  is:

- (A) 1-cyclohexyl-3-methyl-1-pentene (B) 3-methyl-5-cyclohexyl-pent-1-ene  
(C) 1-cyclohexyl-3-ethyl-but-1-ene (D) 1-cyclohexyl-3,4-dimethyl-but-1-ene

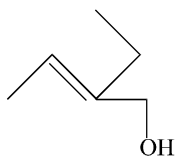
Q.67 The correct IUPAC name of the compound  $\text{CH}_3 - \text{CH}_2 - \overset{\text{CH}_3}{\underset{|}{\text{C}}} = \overset{\text{CH}_3}{\underset{|}{\text{C}}} - \underset{\text{C}_2\text{H}_5}{\underset{|}{\text{CH}}} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$  :

- (A) 5-ethyl, 3, 6-dimethyl non-3-ene (B) 5-ethyl-4, 7-dimethyl non-3-ene  
(C) 4-methyl-5, 7-diethyl oct-2-ene (D) 2,4-ethyl-5-methyl oct-2-ene

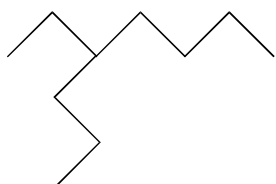
**EXERCISE - II**

Give the IUPAC names for each of the following :

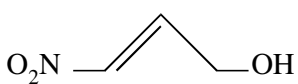
Q.1



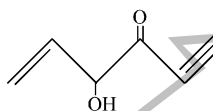
Q.2



Q.3



Q.4



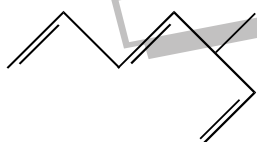
Q.5



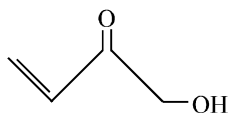
Q.6



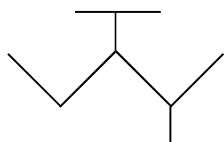
Q.7



Q.8



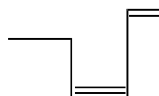
Q.9



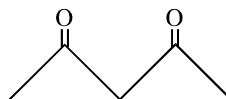
Q.10



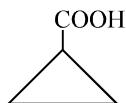
Q.11



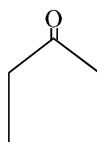
Q.12



Q.13



Q.14



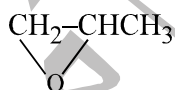
Q.15



Q.16



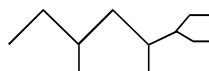
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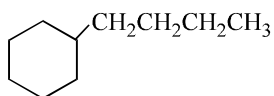
Q.18



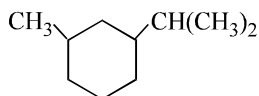
Q.19



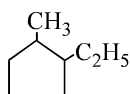
Q.20



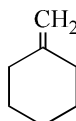
Q.21

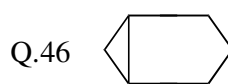
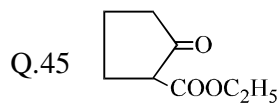
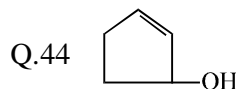
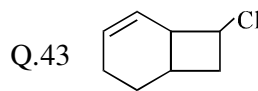
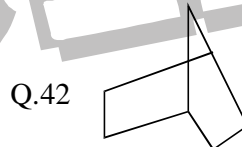
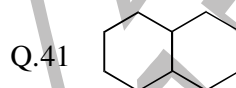
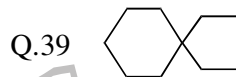
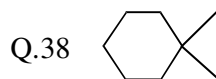
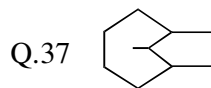
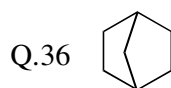
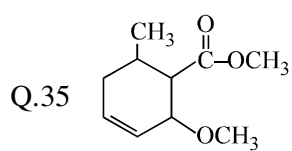
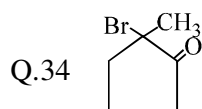
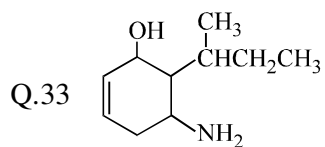
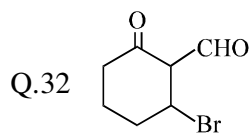
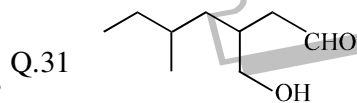
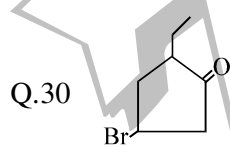
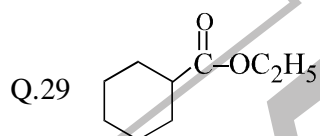
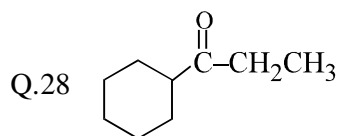
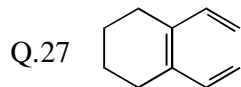
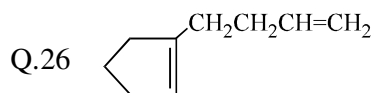
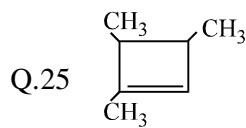


Q.22

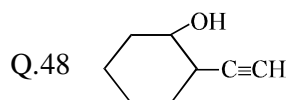
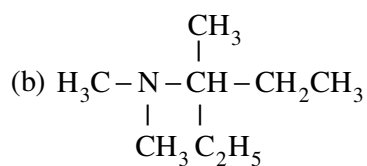
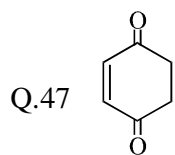


Q.23

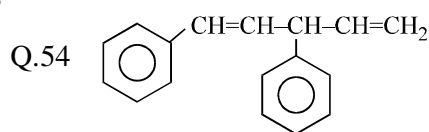
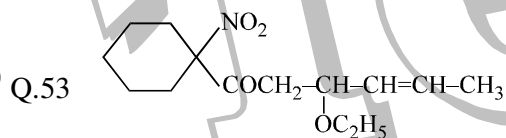
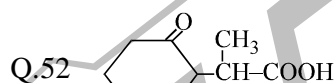
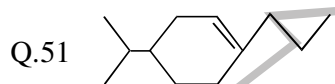
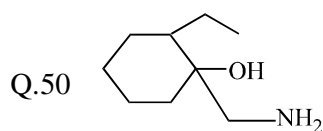
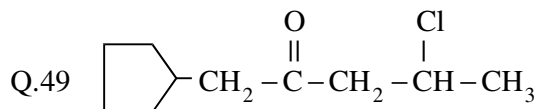




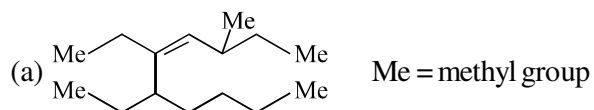




Q.56 Write IUPAC name of succinic acid



Q.55 Write IUPAC Name of following :

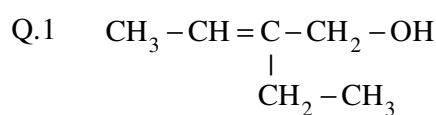


## ANSWER KEY

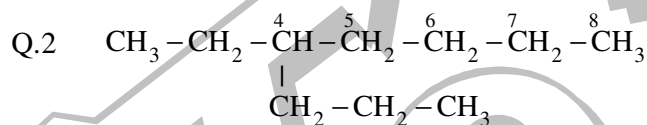
### EXERCISE - I

Q.1	B	Q.2	A	Q.3	B	Q.4	C	Q.5	B	Q.6	B	Q.7	C
Q.8	C	Q.9	C	Q.10	B	Q.11	C	Q.12	D	Q.13	A	Q.14	B
Q.15	D	Q.16	D	Q.17	C	Q.18	D	Q.19	C	Q.20	D	Q.21	D
Q.22	C	Q.23	C	Q.24	C	Q.25	B	Q.26	B	Q.27	C	Q.28	B
Q.29	D	Q.30	B	Q.31	B	Q.32	B	Q.33	A	Q.34	A	Q.35	B
Q.36	C	Q.37	A	Q.38	D	Q.39	A	Q.40	B	Q.41	B	Q.42	A
Q.43	D	Q.44	C	Q.45	D	Q.46	B	Q.47	C	Q.48	C	Q.49	C
Q.50	B	Q.51	A	Q.52	C	Q.53	C	Q.54	A	Q.55	D	Q.56	A
Q.57	A	Q.58	A	Q.59	B	Q.60	D	Q.61	D	Q.62	C	Q.63	C
Q.64	B	Q.65	D	Q.66	A	Q.67	A						

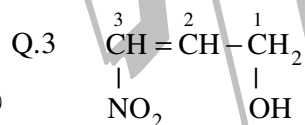
### EXERCISE - II



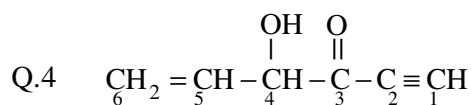
2-ethyl-2-butene-1-ol



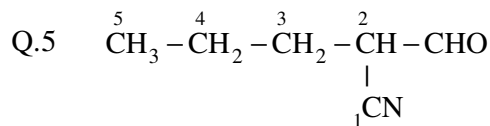
4-Ethyl octane



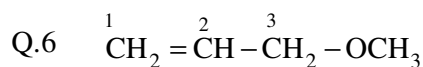
3-nitro-2-propene-1-ol



4-hydroxy-5-hexene-1-yne-3-one

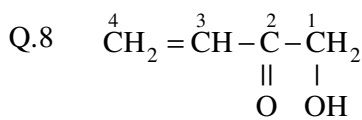


2-Formyl pentane nitrile

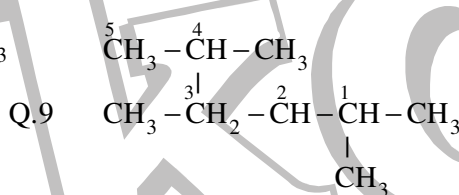


3-Methoxy-1-propene

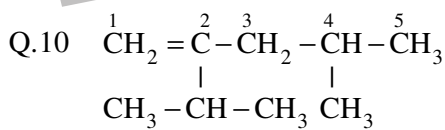
Q.7 3-methyl-1,4,6-Heptatriene



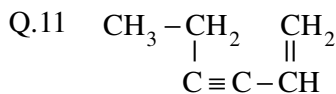
1-Hydroxy-3-Butene-2-one



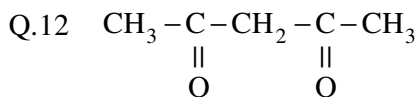
3-Ethyl-2,4-dimethyl pentane



2-isopropyl-4-methyl-1-pentene



1-Hexene-3-yne



2-4, pentane dione

Q.13 Cyclopropanecarboxylic acid

- Q.14 Cyclopropane carboxylic acid
- Q.15 1,3,5-cyclohexatriene
- Q.16 1,3-cyclobutadiene
- Q.17 1,2-epoxy propane
- Q.18 2,2,6,7-tetramethylcatane
- Q.19 3-ethyl-4,6-dimethyloctane
- Q.20 Butylcyclohexane
- Q.21 3-isopropyl-1-methylcyclohexane
- Q.22 2-ethyl-1-methylcyclopentane
- Q.23 Methyl enyl cyclohexane
- Q.24 Isopylidencyclopentane
- Q.25 1,3,4-dimethyl-1-cyclobutene
- Q.26 1-(3-butenyl) cyclopentene
- Q.27 1,2-diethenyl cyclohexene
- Q.28 1-cyclohexyl-1-propanone
- Q.29 Ethyl cyclohexanecarboxylate
- Q.30 4-Bromo-2-ethyl cyclopentaneone
- Q.31 3-(1-hydroxyethyl)-5-methylheptanal
- Q.32 6-Bromo-2-oxocyclohexanecarbaldehyde
- Q.33 3-amino-2-sec-butyl-5-cyclohexen-1-ol
- Q.34 2-bromo-2-methyl cyclopentanone
- Q.35 Methyl-2-methoxy-6-methyl-3- cyclohexene carboxylate
- Q.36 Bicylo(2.2.1)heptane
- Q.37 9-methyl bicyclo(4.2.1) nonane
- Q.38 spiro (2.5) octane
- Q.39 spiro(4.5) decane
- Q.40 Bicyclo (2.2.1) heptane
- Q.41 Bicyclo(4.4.0) decane
- Q.42 Bicyclo(2.2.1) heptane
- Q.43 8-chloro bicyclo(4.2.0) oct-2-ene
- Q.44 2-cyclepenten-1-ol
- Q.45 2-carbethoxy cyclopentanone
- Q.46 Bicyclo (3.1.0) hexane
- Q.47 Cyclohex-2-en-1,4-dione
- Q.48 2-ethynyl cyclohexanol
- Q.49 4-chloro-1-cyclopentyl pentane-2-one
- Q.50 1-Amino methyl-2-ethyl cyclohexanol
- Q.51 1-propyl-4-isopropyl-1-cyclohexene
- Q.52 2-( $\beta$ -keto cyclohexyl) propanoic acid
- Q.53 3-ethoxyl-1(1-nitrocyclohexyl)-hexe-4-one-1
- Q.54 1,3-diphenyl-1,4-pentadiene
- Q.55 (a) 5,6-diethyl-3-methyl-dec-4-ene  
(b) N,N,3-trimethyl-3-pentanamine
- Q.56 Butane-1,4-dioic acid

## NOTES