

## CET Chemistry 2012

1. Aim & Scope of Organic Chemistry
2. Composition of Organic compounds
3. Classification of Organic compounds
4. Polymers

1. Which one of the following drug reduces fever?

- 1) Analgesics
- 2) Tranquilizers
- 3) Antipyretics
- 4) Antibiotics

**Ans: 3) Antipyretics**

Analgesics are drugs used to relieve the pain. Tranquillizers are drugs used for treatment of mental disorder & stress

Antibiotics are drugs obtained from micro -organisms used to kill some other disease causing micro organism

2. Which of the following could act as a propellant for rockets

- 1) Liquid nitrogen + liquid oxygen
- 2) Liquid Hydrogen + liquid nitrogen
- 3) Liquid oxygen + liquid argon
- 4) Liquid Hydrogen + liquid oxygen

**Ans:4) Liquid Hydrogen + liquid oxygen**

The fuels used for launching rockets are known as propellants

In general rocket propellants consists of a fuel & oxidizers.

Liquid H<sub>2</sub> is a fuel with low mol. mass & high heat of combustion. O<sub>2</sub> is a supporter of combustion

3. Which on is a broad spectrum drug?

- 1) Chloramphenicol
- 2) Chloroquine
- 3) Chloroxylenol
- 4) Plasmoquine

**Ans: 1) Chloramphenicol**

The antibiotics are used to kill many micro-organisms and effective against many diseases are called broad spectrum drugs. Chloramphenicol is a antibiotic.

Chloroquine & Plasmoquine are antimalarials

Chloroxylenol is a antiseptics

**4)The explosive RDX is obtained by**

- 1) Nitration of Toluene
- 2) Nitration of Phenol
- 3) Nitration of urotropine
- 4) Nitration of cellulose

**Ans: 3) Nitration of urotropine**

Nitration of urotropine gives RDX or cyclonite

Nitration of toluene gives TNT

Nitration of phenol gives picric acid

Nitration of cellulose gives gun cotton

**5. Empirical formula of the compound is CH<sub>2</sub>O. Its molecular mass is 180. Then the molecular formula will be.**

- 1) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- 2) C<sub>5</sub>H<sub>10</sub>O<sub>5</sub>
- 3) C<sub>3</sub>H<sub>6</sub>O<sub>3</sub>
- 4) C<sub>4</sub>H<sub>8</sub>O<sub>4</sub>

**Ans: 1) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>**

Molecular formula =(empirical formula)<sub>n</sub>

Empirical formula mass = 12+2+16 =30

n= Molecular formula mass = 180 = 6

Empirical formula mass      30

Molecular formula = (CH<sub>2</sub>O)<sub>6</sub> =C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>

**6. In Kjeldahl's method ammonia from 5gm of food neutralizes 30cm<sup>3</sup> of 0.1N acid. The percentage of nitrogen in the food is.**

- 1) 8.4
- 2) 0.84
- 3) 1.68
- 4) 16.8

**Ans: 2)0.84**

$$\% \text{ of N} = \frac{1.4(NV)\text{acid used for neutralization}}{\text{Mass of organic compound}}$$

$$= \frac{1.4 \times 0.1 \times 30}{5} = 0.84$$

5

**7. The compound which dose not gives Prussian blue colour in the Lassaigne's test for nitrogen is.**

- 1) Aniline
- 2) Glycine
- 3) Urea
- 4) Hydrazine

**Ans: 4) Hydrazine**

All the compounds contain nitrogen. But hydrazine (NH<sub>2</sub>-NH<sub>2</sub>) does not contain carbon required for the formation of NaCN

**8. 0.15 gram of hydrocarbon on complete combustion gives 0.44 gram of CO<sub>2</sub> .**

**The % of carbon & hydrogen is**

- 1) 80 & 20
- 2) 40 & 60
- 3) 90 & 10
- 4) 70 & 30

**Ans: 4) 80 & 20**

Hydrocarbons contains only C &H

$$\begin{aligned} \text{\% of C} &= \frac{12}{44} \times \frac{\text{mass of CO}_2}{\text{mass of compound}} \times 100 \\ &= \frac{12}{44} \times \frac{0.44}{0.15} \times 100 = 80 \end{aligned}$$

Therefore % hydrogen = 20

**9. An organic compound contains 40% Carbon, 6.7% hydrogen and rest oxygen. The empirical formula of the compound is.**

- 1) C<sub>2</sub>H<sub>2</sub>O
- 2) CH<sub>2</sub>O<sub>2</sub>
- 3) CH<sub>2</sub>O
- 4) CHO

**Ans: 3) CH<sub>2</sub>O**

**10. The functional group isomer of**

**CH<sub>3</sub>-CH<sub>2</sub>-CH<sub>2</sub>-OH is**

- 1)  $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_3 \\ | \\ \text{OH} \end{array}$
- 2) CH<sub>3</sub> CO CH<sub>3</sub>
- 3) CH<sub>3</sub>- O- CH<sub>3</sub>
- 4) CH<sub>3</sub>- CH<sub>2</sub>-O -CH<sub>3</sub>

**Ans: 4) CH<sub>3</sub>- CH<sub>2</sub>-O -CH<sub>3</sub>**

Compounds having same molecular formula but contains different functional group are called functional group isomers

Functional group isomer of alcohols is

ether which contains same number of carbon atoms

**11. The maximum number of isomers for alkenes with a molecular formula C<sub>4</sub>H<sub>8</sub> is**

- 1) Two
- 2) Three
- 3) Four
- 4) Five

**Ans: 3) Four**

Alkenes with molecular formula  $C_4H_8$  exhibits chain isomerism, position isomerism & geometrical isomerism. The four isomers are 1-butene, 2-methylpropene, cis-2-butene and trans- 2-butene

**12. Which one of the following shows functional isomerism?**

- 1)  $C_2H_4$
- 2)  $C_3H_6$
- 3)  $C_2H_5OH$
- 4)  $CH_2Cl_2$

**Ans: 3)  $C_2H_5OH$**

Functional group isomer of  $C_2H_5OH$  is

$CH_3-O-CH_3$ . (functional group isomer of alcohol is ether).

Further Hydrocarbons & halo alkanes dose not exhibit functional group isomerism

**13. Compounds  $CH_3-O-C_3H_7$  and  $C_2H_5-O-C_2H_5$  exhibit**

- 1) Metamerism
- 2) Cis-trans isomerism
- 3) Chain isomerism
- 4) Position isomerism

**Ans: 1) Metamerism**

Compounds having same molecular formula but different distribution of alkyl groups are called metamers. In this example distribution of alkyl groups around the functional group  $-O-$  are different. In first isomer  $CH_3$  &  $C_3H_7$ . In second isomer  $C_2H_5$  &  $C_2H_5$

**14. Heterocyclic compound among the following is**

- 1) Pyrrole
- 2) Benzene
- 3) Cyclopropane
- 4) Naphthalene

**Ans: 1) Pyrrole**

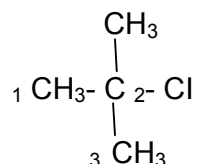
Heterocyclic compounds have ring structure in which one or more carbon atoms of the ring is replaced by hetero atoms like O, N Or S. pyrrole is a heterocyclic compound containing oxygen. Benzene & Naphthalene are aromatic compounds. Cyclopropane is a cycloalkane.

15. The IUPAC name of tert-butylchloride is

- 1) 4-chlorobutane
- 2) 2-Chlorobutane
- 3) 1-chloro-3-methylpropane
- 4) 2-chloro-2-methylpropane

Ans: 4) 2-chloro-2-methylpropane

Structure of tert-butylchloride is



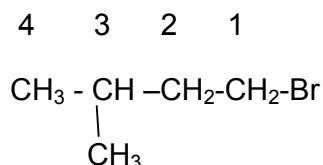
parent chain contains 3 C-atoms. it is a derivative of propane. Two substituent groups  $-\text{CH}_3$  &  $-\text{Cl}$  are on second carbon. Names of the groups are arranged alphabetically.

16. The IUPAC name of  $(\text{CH}_3)_2 \text{CH}-\text{CH}_2-\text{CH}_2-\text{Br}$  is

- 1) 3,3-dimethyl-1-bromopropane
- 2) 2-methyl-2-bromobutane
- 3) 1-bromopentane
- 4) 1-bromo-3-methylbutane

Ans: 4) 1-bromo-3-methylbutane

The structure of the molecule is



The parent chain contains 4 C-atoms. Chain is numbered from right hand side (substituent group's gets no. 1 & 3). Further names of the two groups are arranged alphabetically.

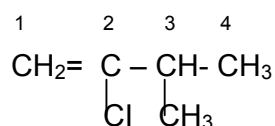
17. The IUPAC name of  $\text{CH}_2 = \underset{\text{Cl}}{\text{C}} - \underset{\text{CH}_3}{\text{CH}} - \text{CH}_3$  is

- 1) 2-chloropent-1-ene
- 2) 2-methyl-3-chlorobut-3-ene

3) 3-methyl-2-chlorobut-1-ene

4) 2-chloro-3-methylbut-1-ene

**Ans: 4) 2-chloro-3-methylbut-1-ene**



parent chain contains 4 carbon atoms. Numbering of carbon atoms is done from the right which gives least number to the position of double bond. The two groups, chloro & methyl are arranged alphabetically.

**18. Which of the following IUPAC name is correct?**

1) 2-Methyl-3-ethyl pentane

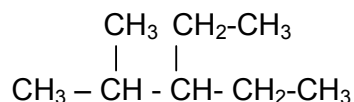
2) 2-Ethyl-3-methyl pentane

3) 3-Ethyl-2-methyl pentane

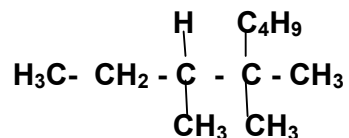
4) 3-Methyl-2-ethyl pentane

**Ans: 3) 3-Ethyl-2-methyl pentane**

Substituent groups are arranged alphabetically. Ethyl group should be named first. So option 1&4 are wrong. In alkane ethyl group cannot be present on second carbon atom. Option 2 also wrong. Option 3 is correct. Its structure is



**19. The IUPAC name of**



1) 2-ethyl 3, 3-dimethylheptane

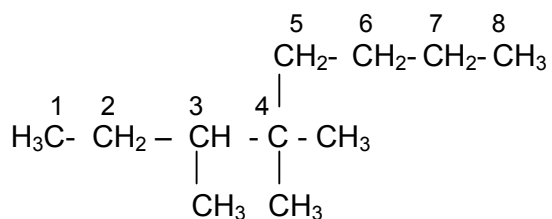
2) 2-butyl 2,3-dimethyl pentane

3) 2-ethyl-3,4,-dimethylheptane

4) 3,4,4-trimethyloctane

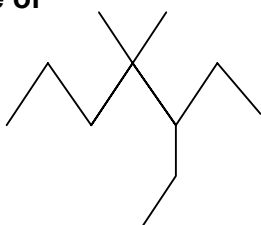
**Ans: 4) 3,4,4-trimethyloctane**

The structure of the molecule



parent chain contains 8 C-atoms. Carbon chain is numbered from left. 3 methyl groups present at 3,4,4 position

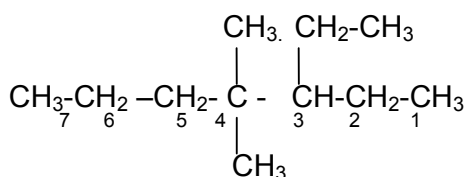
20. The IUPAC name of



IS

- 1) 4,4-dimethyl-3-ethylheptane
- 2) 5-ethyl-4,4-dimethylheptane
- 3) 3-ethyl-4,4-dimethylheptane
- 4) 1,1-diethyl-2,2-dimethylpentane

Ans: 3) 3-ethyl-4,4-dimethylheptane



Longest continuous carbon chain contains 7 carbon atoms. The compound is derivative of heptane. Carbon chain is numbered from the right. The substituent groups get no 3,4&4. (From left no 4,5&5) Groups are arranged alphabetically.

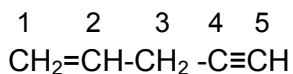
21. The IUPAC name for the compound



- 1) Pent-1-en-4-yne
- 2) Pent-4-en-1-yne
- 3) Pent-2-en-4-yne
- 4) Pent-1-en-3-yne



**Ans: 1) Pent-1-en-4-yne**



If double & triple bonds are present in equidistance from both the end, then double bond is preferred over triple bond. So carbon chain is numbered from right.

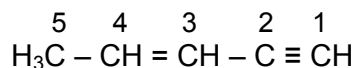
**22. The IUPAC name of the compound**

**$\text{H}_3\text{C}-\text{CH}=\text{CH}-\text{C}\equiv\text{CH}$  is**

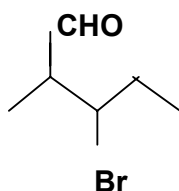
- 1) Pent -2 -en-4-yne
- 2) Pent – 3- en-1-yne
- 3) Pent -3-en-5-yne
- 4) Pent -2,4 -en-2-yne

**Ans: 2) Pent – 3- en-1-yne**

If the triple bond is closer from one end than the double bond from other end then triple bond is given the preference.



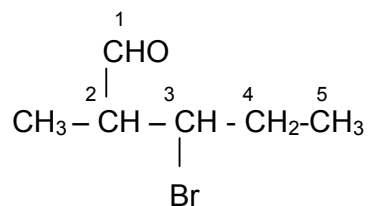
**23. The IUPAC name of**



- 1) 2-methyl-3-bromobutanal
- 2) 3-bromo-2-methylpentanal
- 3) 2-methyl-3-bromohexanal
- 4) 3-bromo-2-methylbutanal

**Ans: 2)3-bromo-2-methylpentanal**

The structure is



-CHO is the functional group. Parent chain contains 5 carbon atoms. Hence it is pentanal. Names of -Br & -CH<sub>3</sub> are prefixed alphabetically.

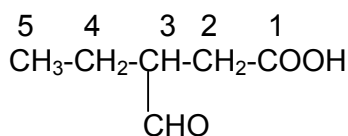
24. IUPAC name of the compound  $\text{CH}_3\text{-CH}_2\text{-CH-CH}_2\text{-COOH}$  is

$$\begin{array}{c} \text{CHO} \\ | \\ \text{CH}_3\text{-CH}_2\text{-CH-CH}_2\text{-COOH} \end{array}$$

- 1) 3-ethyl-4-oxo-butanoic acid
- 2) 3-formylbutanoic acid
- 3) 3-pentan-3-al-1-oic acid
- 4) 3-formylpentanoic acid

**Ans: 4) 3-formylpentanoic**

On the basis of priority  $\text{-COOH}$  is principle functional group. &  $\text{-CHO}$  is substituent group. Longest chain including principle functional group contains 5 carbon atoms. Here  $\text{-CHO}$  is not part of parent chain. Hence it is named as formyl.



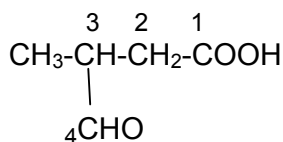
25. IUPAC name of the compound  $\text{CH}_3\text{-CH-CH}_2\text{-COOH}$  is

$$\begin{array}{c} \text{CHO} \\ | \\ \text{CH}_3\text{-CH-CH}_2\text{-COOH} \end{array}$$

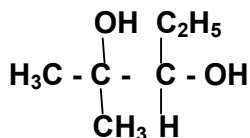
- 1) 3-formylbutanoic acid
- 2) 4-oxo-3-methylbutanoic acid
- 3) 3-formylpropanoic acid
- 4) butan-3-al-1-oic acid

**Ans: 2) 4-oxo-3-methylbutanoic acid**

Here  $\text{-COOH}$  is principle functional group. the substituent  $\text{-CHO}$  group is part of parent chain. Since carbon of  $\text{-CHO}$  group is already named in parent chain, the substituent group is named as  $\text{-oxo}$  (not formyl)



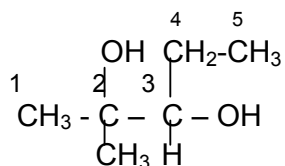
26. IUPAC name of the compound is



- 1) 4-methyl-1,2-pentanediol
- 2) 2-methyl-2,3-pentanediol
- 3) 2-methyl-1,2-hexanediol
- 4) 1-ethyl-2-methyl-1,2-propanediol

**Ans: 2) 2-methyl-2,3-pentanediol**

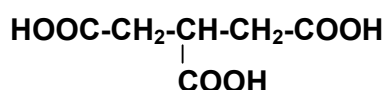
the structure of the molecule is



Parent chain contains 5 C-atoms & 2 -OH

Groups. It is a pentanediol. Chain is numbered from left so functional group's gets minimum number

**27. IUPAC name of the compound**



- 1) 3-carboxy pentanoic acid
- 2) Propane-1,2,3-tricarboxylic acid
- 3) Hexane-1,3,5-trioic acid
- 4) Propan-1,2,3-tricarboxylic acid

**Ans: 4) Propan -1,2,3- tricarboxylic acid**

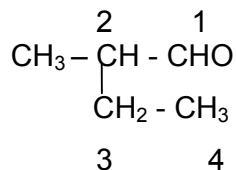
If an unbranched carbon chain is directly linked to more than two same functional groups the organic compounds named as derivative of parent alkane which does not include the carbon atoms of the functional groups.

**28. What is the IUPAC name compound**  $\begin{array}{c} \text{CH}_3\text{-CH-CHO} \\ | \\ \text{CH}_2\text{-CH}_3 \end{array}$  is

- 1) Butan-2-aldehyde
- 2) 2-ethyl propanal
- 3) 2-methyl butanal
- 4) 2-methyl butanol

**Ans: 3) 2-methyl butanal**

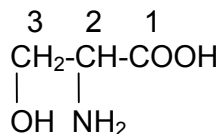
The molecule contains aldehyde functional group. Parent chain contains 4 carbon atoms. Carbon chain is numbered from the direction which gives the No. 1 for the -CHO carbon atom.



29 What is the IUPAC name of the compound  $\begin{array}{c} \text{CH}_2\text{-CH-COOH} \\ | \quad | \\ \text{OH} \quad \text{NH}_2 \end{array}$

- 1) 1-hydroxy-2-amino-3-propanoic acid
- 2) 3-hydroxy-2-aminopropanoic acid
- 3) 2-amino-3-hydroxypropanoic acid
- 4) 1-amino-2-hydroxypropanoic acid

**Ans: 3) 2-amino-3-hydroxypropanoic acid**



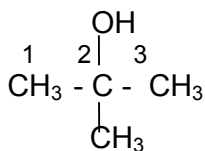
-COOH is principle functional group. -OH & -NH<sub>2</sub> are substituent's. chain is numbered from left so that -COOH carbon should get No. 1

**30 The correct IUPAC name for the compound (CH<sub>3</sub>)<sub>3</sub>COH is:**

- 1) Trimethylmethan -1-ol
- 2) 1,1,1-Trimethylmethan -1-ol
- 3) 1-Butanol
- 4) 2-Methylpropan-2-ol

**Ans: 2-Methylpropan-2-ol**

The structure of the molecules is

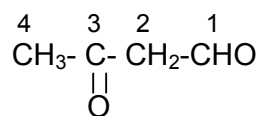


The parent chain contains three carbon atoms. The -OH functional group and -CH<sub>3</sub> substituent groups are present on second carbon

**31 The IUPAC name for the compound  $\text{CH}_3\text{-}\overset{\text{O}}{\parallel}{\text{C}}\text{-CH}_2\text{-CHO}$  is**

- 1) 3-Keto-1-butanal
- 2) 3-Oxobutanal
- 3) 4-oxo-2-butanone
- 4) 4-formyl-2-butanone

**Ans: 2) 3-Oxobutanal**



-CHO is principle functional group. >C=O group is substituent and its name is prefixed as oxo. The chain is numbered from right so that -CHO carbon should get no.1

**32 Gutlapercha, a thermoplastic is**

- 1) A type of nylon sheet.
- 2) Synthetic rubber
- 3) An isomer of natural rubber
- 4) Thread of terylene

**Ans: 3) An isomer of natural rubber**

Isoprene is a monomer of both natural rubber & guttapurcha. Natural rubber is a polymer of cis-isoprene. Guttapurcha is a polymer of trans-isoprene. Since it softens on heating, it is a thermoplastic.

**33 Zeigler-Natta catalyst is used in making**

- 1) LDPE
- 2) HDPE
- 3) Polystyrene
- 4) Nylon-66

**Ans: 2) HDPE**

When ethene is heated to 60-70°C at 6-7 atm in the presence of Ziegler-Natta catalyst ( $\text{TiCl}_4 + (\text{C}_2\text{H}_5)_3\text{Al}$  in n-heptane) high density polyethene (HDPE) is formed.

**34 The monomer of Buna-s rubber are**

- 1) Styrene & butadiene
- 2) Isoprene & butadiene
- 3) Vinyl chloride & sulphur
- 4) Butadiene

**Ans: 1) Styrene & butadiene**

Buna-S is a synthetic rubber obtained by heating butadiene & styrene in presence of sodium catalyst.

In Buna-S, Bu stands for butadiene. Na stands for sodium. S stands for styrene.

**35 Which of the following is not a homopolymer?**

- 1) Bakelite
- 2) Polyethylene
- 3) Teflon
- 4) PVC

**Ans: 1) Bakelite**

Homopolymer -polymers containing only one type of monomer. Polythene, Teflon & PVC are homopolymers.

Copolymers-polymer containing more than one monomers. Bakelite is a polymer of 2 monomers formaldehyde & phenol

**36 The condensation polymer among the following is**

- 1) PVC
- 2) Polythene
- 3) Rubber
- 4) Protein

**Ans: 4) Protein**

Condensation polymer- formed by condensation of monomers with the elimination of small molecules like  $H_2O$ ,  $NH_3$  etc. protein is formed by condensation of monomers  $\alpha$ -amino acids with the elimination of  $H_2O$

Addition polymers- formed by simple addition of monomers without elimination. Ex- polythene

**37 In Lassaigne's test thiourea is converted into**

- 1) NaCN
- 2)  $Na_2S$
- 3)  $Na_2SO_4$
- 4) NaCNS

**Ans: 4) NaCNS**

Thiourea contains both N&S. When it is heated with sodium metal it is converted in to NaCNS

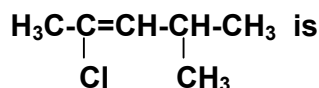
**38 Which of the following are isomers**

- 1) Propanone & Ethanol
- 2) Methylalcohol & Dimethyl ether
- 3) Propanoic acid & Acetone
- 4) Acetic acid & methyl formate

**Ans: 4) Acetic acid & methyl formate**

The following pairs have different functional groups. So only functional isomer is possible. Propanone & ethanol are not isomeric (ketone & alcohol). Methyl alcohol & dimethyl ether are alcohol & ether. They can be isomeric. But they have different molecular formula. Propanoic acid & acetone not isomeric (carboxylic acid & ketone). Acetic acid & methylformate are isomeric (carboxylic acid & formate ester). They have same molecular formula.

**39 The IUPAC name of**



- 1) 2-Chloro-4-methyl-2-pentene
- 2) 4-Chloro-2-methyl-2-pentene
- 3) 4-methyl-2-chloro-2-pentene
- 4) 2-Chloro-4,4-dimethyl-2-butene

**Ans: 2) 2-methyl propanoic acid**

Numbering of carbon atoms is done from the end which gives least number for the position of the double bond. So numbering from right. The chain contains five Carbon atoms. Hence it is 2-pentene. Further the Chloro & methyl groups present on C<sub>2</sub> and C<sub>4</sub> respectively. The names of two groups arranged alphabetically.

**40 The correct decreasing order of priority for the functional groups of organic compounds in the IUPAC system of nomenclature is**

- 1) -CHO, -COOH, -COOR, -CONH<sub>2</sub>
- 2) -CONH<sub>2</sub>, -CHO, -COOR, -COOH
- 3) -COOH, -COOR, -CONH<sub>2</sub>, -CHO
- 4) -COOR, -COOH, -CONH<sub>2</sub>, -CHO

**Ans: 3) -COOH, -COOR, -CONH<sub>2</sub>, -CHO**

The order of priority is -COOH > -COOR > -CONH<sub>2</sub> > -CHO > -CO- > -OH > -NH<sub>2</sub> > C=C > C≡C

**41 Household gaseous fuel (LPG) mainly contains**

- 1)  $C_2H_2$
- 2)  $CH_4$
- 3)  $C_4H_{10}$
- 4)  $C_2H_4$

**Ans: 3)  $C_4H_{10}$**

Mainly contains butane

**42 Paracetamol is a/an:**

- 1) Analgesics
- 2) Antipyretics
- 3) Antimicrobial
- 4) Both antipyretic and analgesic

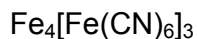
**Ans: 4) Both antipyretic and analgesic**

- 1) Paracetamol and aspirin acts both antipyretic as well as antiseptic

**43 During Lassaigns test for nitrogen using sodium fusion extract the nitrogen of organic compound gets converted into blue colour.**

- 1) Sodium nitride
- 2) Sodium cyanide
- 3) Sodium ferro cyanide
- 4) Ferric ferrocyanide

**Ans: 4) Ferric ferrocyanide**



ferric ferrocyanide(prussian blue colour)

**44 In the Lassaigne's test for sulphur in the organic compound with sodium nitopruesside solution the purple color formed is due to**

- 1)  $Na_4[Fe(CN)_5 NOS]$
- 2)  $Na_3(Fe(CN)_5 ]$
- 3)  $Na_2[Fe(CN)_5 NOS]$
- 4)  $Na_3[Fe(CN)_6]$



**Ans: 1)  $\text{Na}_4[\text{Fe}(\text{CN})_5\text{NOS}]$**



sodium nitroprusside (from o.c) purple colour

**45 Natural rubber is made up of**

- 1) Cis 1,2- isoprene units
- 2) Cis 1,3- isoprene units
- 3) Cis 1,4- isoprene units
- 4) Cis 1,5- isoprene units

**Ans: 3) Cis 1,4- isoprene units**

During polymerisation C1 and C4 atoms of cis isoprene units link to each other.

**46 The alkane with molecular formula  $\text{C}_7\text{H}_{14}$  exhibit**

- 1) Chain isomerism
- 2) Optical isomerism
- 3) Position isomerism
- 4) Both chain & optical isomerism

**Ans: 4) Both chain & optical isomerism**

Alkane up to carbon atoms 4-6 exhibit only chain isomerism. Alkane with carbon atoms 7 onwards show both chain & optical isomerism. (3-methylhexane is contain one chiral carbon & is optically active)

**47 The IUPAC name of  $\text{CH}_3\text{COOCH}_3$  is**

- 1) Ethyl methanote
- 2) Methyl acetate
- 3) Methyl methanote
- 4) Methyl ethanote

**Ans: 4) Methyl ethanote**

The compound is ester. IUPAC name of the ester is obtained from corresponding carboxylic acid by replacing suffix -oic acid by -ate and the alkyl group bonded to oxygen atom name is added as a prefix.

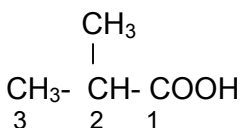
In this example carboxylic acid is ethanoic acid & alkyl group is methyl

48

The IUPAC name of  $\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}-\text{C}-\text{COOH} \\ | \\ \text{CH}_3 \end{array}$  is

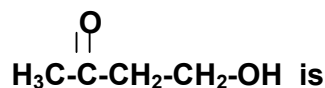
- 1) Iso butyric acid
- 2) 2-methylpropanoic acid
- 3) Tertiary butyric acid
- 4) Butanoic acid

**Ans: 2-methylpropanoic acid**



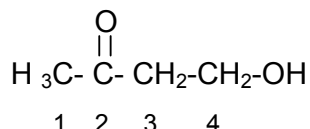
Parent chain contains 3 carbon atoms. The molecule is propanoic acid.  $-\text{CH}_3$  substituent is present on second carbon atom.

49 The IUPAC name of the compound



- 1) 3-oxobutan-1-ol
- 2) 1-hydroxy butan-3-one
- 3) 4-hydroxy butan-2-one
- 4) 2-oxobutan-4-ol

**Ans: 3) 4-hydroxy butan-2-one**



$>\text{C}=\text{O}$  groups gets preference over the  $-\text{OH}$ .  $>\text{C}=\text{O}$  group is principle functional group.  $-\text{OH}$  is substituent group and is named as hydroxy. Numbering is done from the left so that the carbon atom of  $>\text{C}=\text{O}$  gets minimum number.

50 In Lassaigne's test thiourea is converted into

- 1) NaCN
- 2)  $\text{Na}_2\text{S}$
- 3)  $\text{Na}_2\text{SO}_4$
- 4) NaCNS

**Ans: 4) NaCNS**

Thiourea contains both N&S. When it is heated with sodium metal it is converted into NaCNS