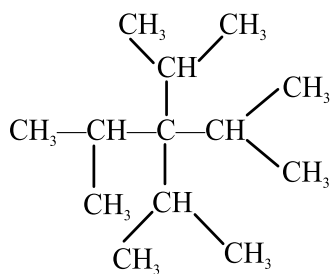
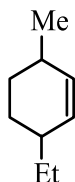


51. The number of carbon atoms in parent carbon chain is?

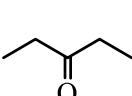
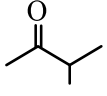


- (1) 3 (2) 4
(3) 5 (4) None of these

52. The IUPAC name of the compound



- (1) 3-Methyl-6-ethylcyclohexene
(2) 6-Ethyl-3-methyl cyclohexene
(3) 3-Ethyl-6-methyl cyclohexene
(4) 6-Methyl-3-ethyl cyclohexene

53. The compounds  and  are

- (1) Chain isomers (2) Metamers
(3) Position isomers (4) Both (1) & (2)

54. In allene ($\text{H}_2\text{C} = \text{C} = \text{CH}_2$), the type(s) of hybridisation of the carbon atoms is (are)

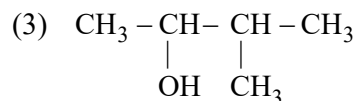
- (1) sp and sp^3 (2) sp and sp^2
(3) Only sp^2 (4) sp^2 and sp^3

55. Which of the following compound has wrong IUPAC name?

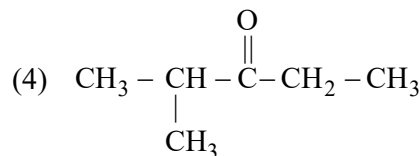
- (1) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{COO} - \text{CH}_2\text{CH}_3$
→ Ethyl butanoate



→ 3-Methylbutanal

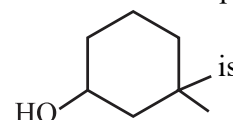


→ 2-Methyl-3-butanol



→ 2-Methyl-3-pentanone

56. The IUPAC name of the compound

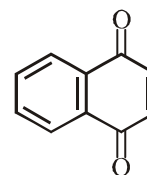


- (1) 3,3-Dimethyl-1-hydroxycyclohexane
(2) 1,1-Dimethyl-3-hydroxycyclohexane
(3) 3,3-Dimethyl-1-cyclohexanol
(4) 1,1-Dimethyl-3-cyclohexanol

57. How many position isomers are possible for chlorophenol?

- (1) 2 (2) 3
(3) 4 (4) 5

58. The number of σ and π bonds in the following molecule is respectively:



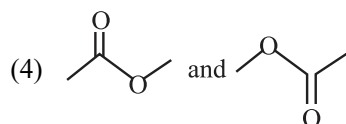
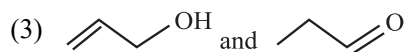
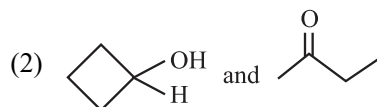
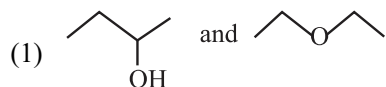
- (1) 19 σ bonds, 6 π bonds
(2) 20 σ bonds, 5 π bonds
(3) 19 σ bonds, 5 π bonds
(4) 20 σ bonds, 6 π bonds

59. What is the nature of marked carbon atom in the following compounds?

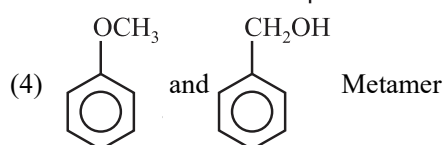
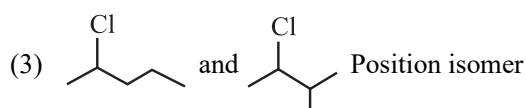
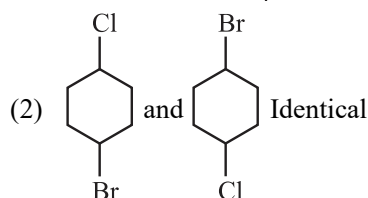
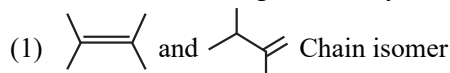


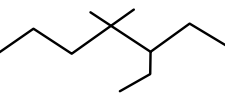
- (1) 3° carbon (2) 2° carbon
(3) 4° carbon (4) 1° carbon

60. Which of the following pairs of compounds are not functional isomers?



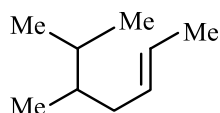
61. Which of the following is correctly matched?



62. The IUPAC name of  is

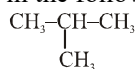
- (1) 3-Ethyl-4, 4-dimethylheptane
(2) 1, 1-Diethyl-2, 2-dimethylpentane
(3) 4, 4-Dimethyl-5, 5-diethylpentane
(4) 5, 5-Diethyl-4, 4-dimethylpentane

63. The IUPAC name of the following molecule



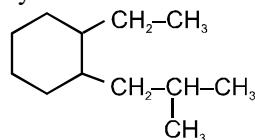
- (1) 5-6-Dimethylhept-2-ene
(2) 2, 3-Dimethylhept-5-ene
(3) 5, 6-Dimethylhept-3-ene
(4) 5-Isopropylhex-2-ene

64. Find the number of 1°, 2° & 3° hydrogen atoms in the following compounds:



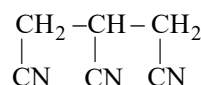
- (1) 1° H → 9, 3° H → 1
(2) 1° H → 6, 2° H → 2
(3) 1° H → 6, 2° H → 4
(4) 1° H → 9, 2° H → 1

65. The number of primary, secondary and tertiary carbons in the following structure are respectively:

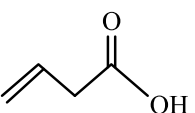


- (1) 6,3,3 (2) 3,6,3
(3) 3,6,2 (4) 3,2,1

66. The IUPAC name of the following compound is

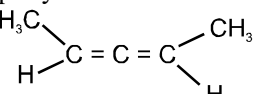


- (1) 1, 2, 3-Tricyanopropane
(2) Propane-1,2,3-tricarbonitrile
(3) 3-Cyanopentane-1, 5-dinitrile
(4) 1, 3, 5-Pentanetrinitrile

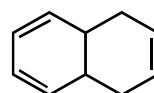
67. The IUPAC name of  is

- (1) But-3-enoic acid
(2) But-1-enoic acid
(3) Pent-7-enoic acid
(4) Prop-2-enoic acid


68. Which of the following compound has sp, sp² and sp³ hybrid carbon atoms?

- (1) 
(2) CH₃ – CH = CH – CH = CH₂
(3) CH₃ – C ≡ C – C ≡ CH
(4) CH₂ = CH – C ≡ CH

69. The number of sp² – sp² hybrid σ bonds in the following compound is:



- (1) 3 (2) 4
(3) 5 (4) 6

70. IUPAC name of the compound  is:

- (1) 3,3-Diethylpentane
- (2) 3,3-Diethylbutane
- (3) 2,2-Diethylpentane
- (4) 2,2-Diethylbutane

71. Correct IUPAC name of ethyl alcohol is:

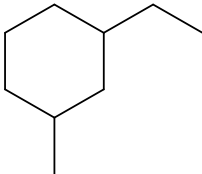
- (1) Methyl carbinol
- (2) Ethanol
- (3) Ethanal
- (4) Grain alcohol

72. IUPAC name of $\text{CH}_3\text{COOC}_2\text{H}_5$ is:

- (1) Ethyl acetate
- (2) Ethylethanoate
- (3) Methyl acetate
- (4) Methylpropanoate

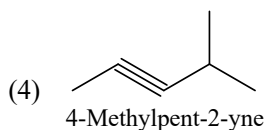
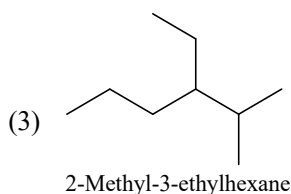
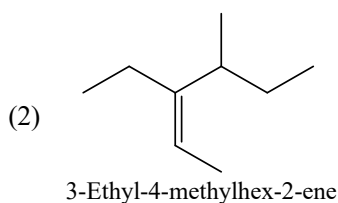
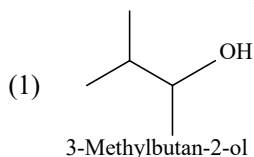
73. IUPAC name of $(\text{CH}_3)_4\text{C}$ is:

- (1) Tetramethyl methane
- (2) 2,2-Dimethylpropane
- (3) 1,1,1-Trimethylethane
- (4) Neopentane

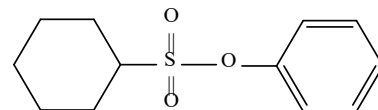
74. The IUPAC name of  is :

- (1) 1-Ethyl-3-methylhexane
- (2) 3-Ethyl-1-methylcyclohexane
- (3) 1-Ethyl-3-methylcyclohexane
- (4) 1-Methyl-3-ethylcyclohexane

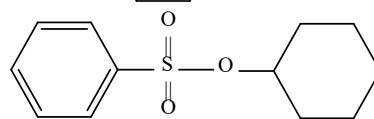
75. Which of the following is not correct?



76. Compound



and

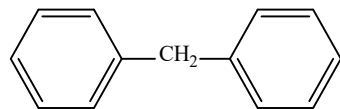


shows

which type of isomerism?

- (1) Position isomerism
- (2) Chain isomerism
- (3) Metamerism
- (4) They are same compounds

77. The molecular formula of diphenylmethane,



, is $\text{C}_{13}\text{H}_{12}$. How

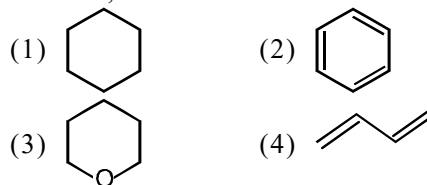
many structural isomers are possible when one of the hydrogen atoms is replaced by a chlorine atom?

- (1) 8
- (2) 6
- (3) 4
- (4) 7

78. $\text{CH}_3 - \text{CN}$ and $\text{CH}_3 - \text{NC}$ are:

- (1) Metamers
- (2) Functional isomers
- (3) Position isomers
- (4) Chain isomers

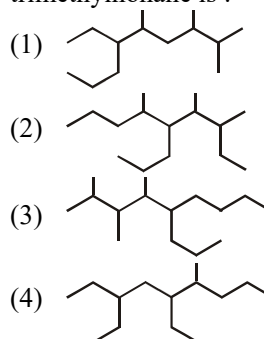
79. Identify the compound which is homocyclic, aromatic, and unsaturated?



80. Which of the following is a primary alkyl halide?

- (1) $\text{C}_6\text{H}_5\text{CHClCH}_3$
- (2) $\text{CH}_3\text{CHClCH}_2\text{CH}_3$
- (3) $(\text{CH}_3)_2\text{CHCH}_2\text{Cl}$
- (4) $(\text{CH}_3)_3\text{CCl}$

81. The correct structure of 6-Ethyl-2,3,5-trimethylnonane is :



82. Compounds with same molecular formula but different structural formulae are called:

- (1) Isomers
- (2) Isotopes
- (3) Isobars
- (4) Isoelectric

83. $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH}$ and $\text{CH}_3 - \text{O} - \text{CH}_3$ are which type of isomers?
- They are not isomers
 - Chain isomers
 - Metamers
 - Position isomers

84. $\text{C}_7\text{H}_7\text{Cl}$ shows how many benzenoid aromatic isomers?

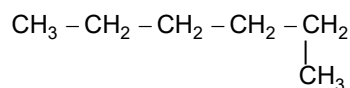
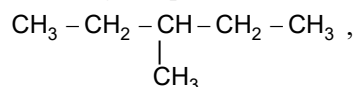
- 4
- 5
- 3
- 6

85. Compounds $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}(\text{OH}) - \text{CH}_3$ and $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}(\text{OH}) - \text{CH}_2 - \text{CH}_3$ are:

- Position isomers
- Chain isomers
- Functional isomers
- They are not isomers

SECTION – B

86. What is the correct relationship between the following compounds?



- Chain isomers
- Position isomers
- Functional isomers
- Identical

87. Total number of structural isomers possible for C_4H_8 is:

- 5
- 4
- 3
- 1

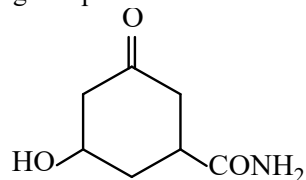
88. During IUPAC naming, minimum priority group among the following is:

- $-\text{CN}$
- $-\text{CHO}$
- $-\text{CO}-$
- $-\text{CONH}_2$

89. IUPAC name of isobutyl chloride is:

- 1-Chloro-2-methylpropane
- 3-Chloro-2-methylpropane
- 2-Methyl-3-chloropropane
- 2-Methyl-1-chloropropane

90. How many functional groups are present in the following compound?



- 4
- 3
- 2
- 5

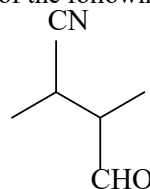
91. Secondary suffix used for the functional group $-\text{NH}_2$ is:

- amino
- amine
- amide
- ammonia

92. For which of the following substituent, prefix 'nitro' is used?

- $-\text{NO}$
- $-\text{NH}_2$
- $-\text{NO}_2$
- $-\text{N} = \text{N}-$

93. IUPAC name of the following compound is:

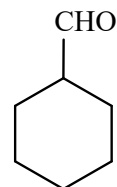


- 4-Cyano-2,3-dimethylbutanal
- 4-Oxo-2,3-dimethylbutanenitrile
- 2,3-Dimethyl-4-oxobutanenitrile
- 3-Formyl-2-methylbutanenitrile

94. Propanone and propanal shows which type of isomerism?

- Chain isomerism
- Position isomerism
- Metamerism
- Functional isomerism

95. How many carbon atoms are present in the parent carbon chain of the following compound?



- 6
- 7
- 1
- 2

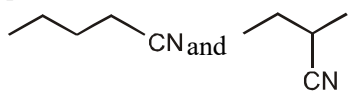
96. Root word used, if nine carbon atoms are present in the parent carbon chain of a compound is:

- Oct
- Non
- Enn
- Hept

97. $\text{CH}_3 - \text{O} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$ and $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{CH}_2 - \text{CH}_3$ are:

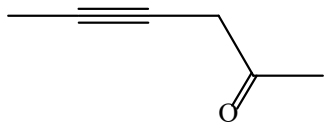
- Position isomers
- Chain isomers
- Tautomers
- Metamers

98. Identify the relationship between the given compounds.



- (1) Chain Isomers
- (2) Functional isomers
- (3) Homologs
- (4) Position Isomers

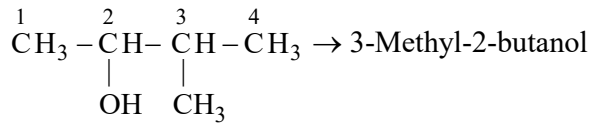
99. IUPAC name of the following compound is:



- (1) Hex-2-yn-4-one
- (2) Hex-4-yn-2-one
- (3) 2-Oxopent-2-yne
- (4) Hex-4-enone

100. $\text{CH}_3 - \text{O} - \text{CH}_3$ and $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{H}$ are:

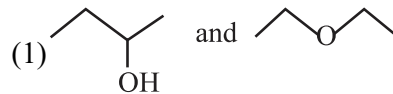
- (1) Chain isomers
- (2) Position isomers
- (3) Functional isomers
- (4) Metamers



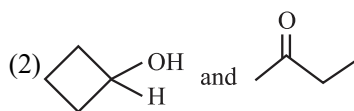
NCERT Page no. 333

56. (3)

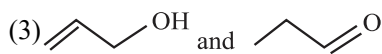
56. (4)



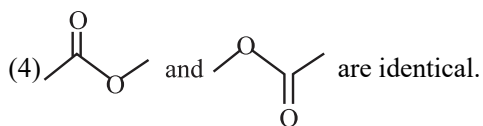
are functional isomers



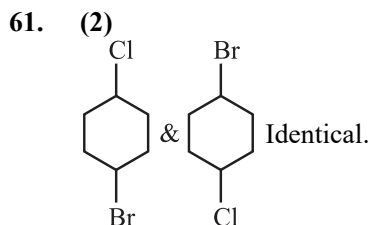
are functional isomers.



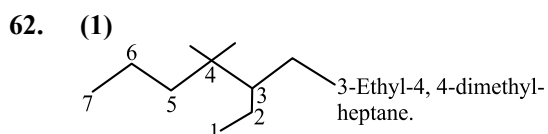
are functional isomers.



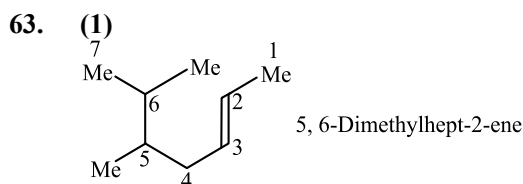
NCERT Page no. 340



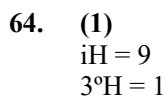
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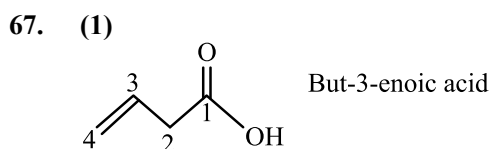
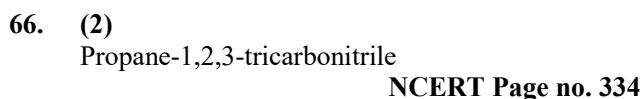
NCERT Page no. 332



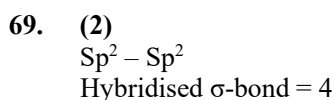
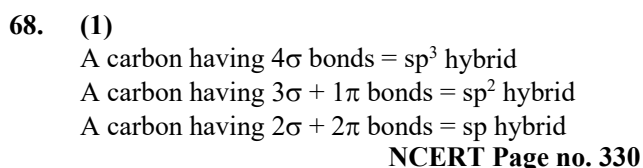
NCERT Page no. 334



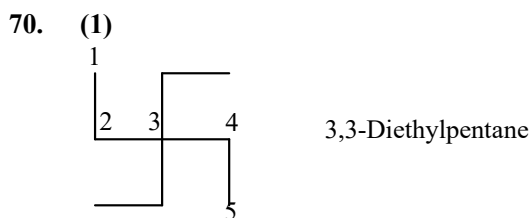
NCERT Page no. 329



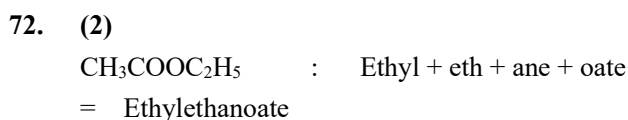
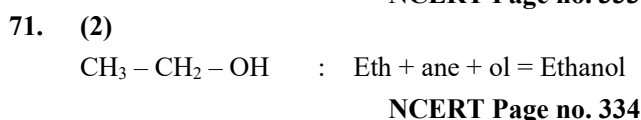
NCERT Page no. 335



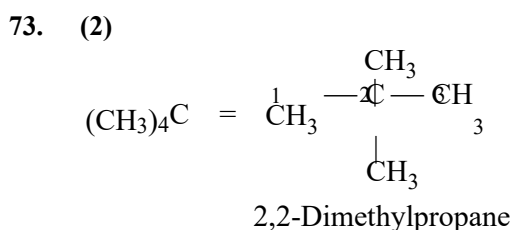
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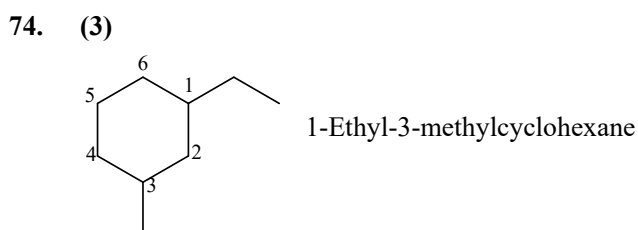
NCERT Page no. 333



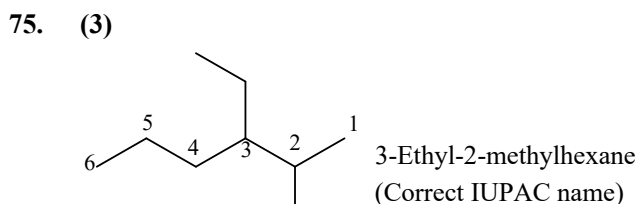
NCERT Page no. 336



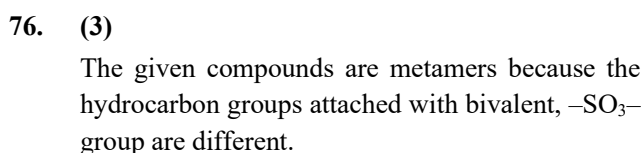
NCERT Page no. 333



NCERT Page no. 334



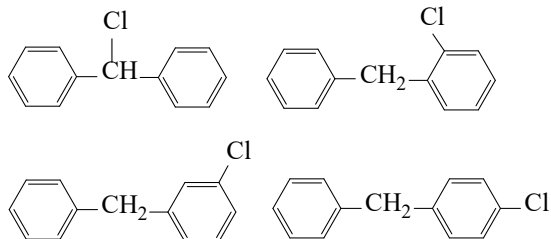
NCERT Page no. 333



NCERT Page no. 340

77. (3)

Structural isomers of the given compound are:



NCERT Page no. 340

78. (2)

$\text{CH}_3 - \text{CN}$ and $\text{CH}_3 - \text{NC}$ are functional isomers since they have different functional groups.

NCERT Page no. 340

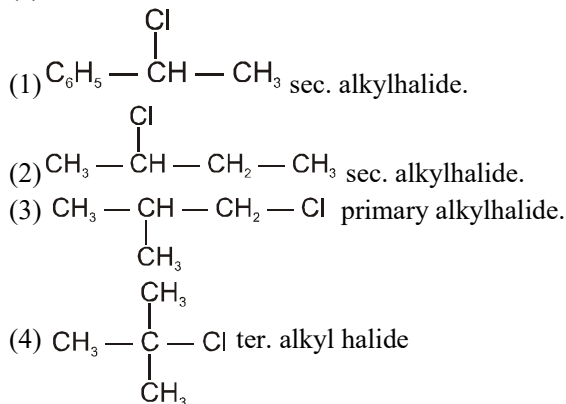
79. (2)



Homocyclic, aromatic and unsaturated

NCERT Page no. 329

70. (3)



NCERT Page no. 329

81. (1)

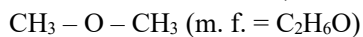
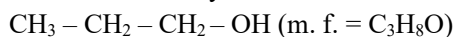
NCERT Page no. 340

82. (1)

NCERT Page no. 340

83. (1)

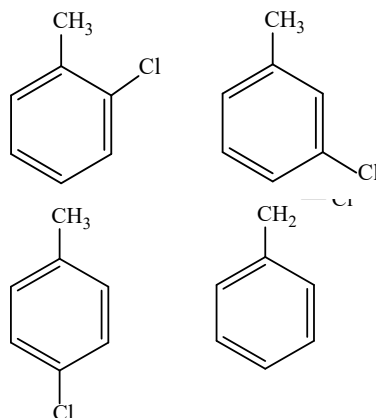
Given compounds have different molecular formula hence they are not isomers.



NCERT Page no. 340

84. (1)

Benzenoid isomers of $\text{C}_7\text{H}_7\text{Cl}$ are as follows:



NCERT Page no. 340

85. (4)

The given compounds $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}(\text{OH}) - \text{CH}_3$ (m. f. = $\text{C}_5\text{H}_{12}\text{O}$) and $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}(\text{OH}) - \text{CH}_2 - \text{CH}_3$ (m. f. = $\text{C}_6\text{H}_{14}\text{O}$) are not isomers because they have different molecular formula.

NCERT Page no. 340

86. (1)

Carbon skeleton is different in both compounds.

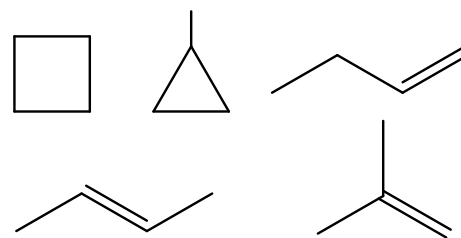
NCERT Page no. 340

87. (1)

Degree of unsaturation in C_4H_8 = 1

Thus,

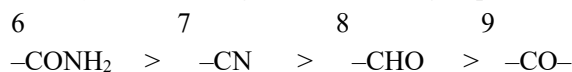
Structural isomers of C_4H_8 are:



NCERT Page no. 340

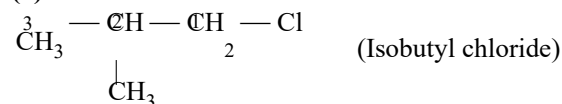
88. (3)

Priority order of the given functional groups is:



NCERT Page no. 336

89. (1)



1-Chloro-2-methylpropane

NCERT Page no. 333

90. (2)

Three functional groups are present in the given compound.

- (i) $-\text{CONH}_2$: Amide
- (ii) $-\text{CO}-$: Ketonic
- (iii) $-\text{OH}$: Alcoholic

NCERT Page no. 335

91. (2)

Secondary suffix used for the functional group $-\text{NH}_2$ is 'amine'

NCERT Page no. 336

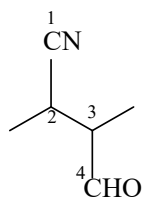
92. (3)

Prefix

- $-\text{NO}$: Nitroso
- $-\text{NH}_2$: Amino
- $-\text{NO}_2$: Nitro
- $-\text{N}=\text{N}-$: Azo

NCERT Page no. 336

93. (3)

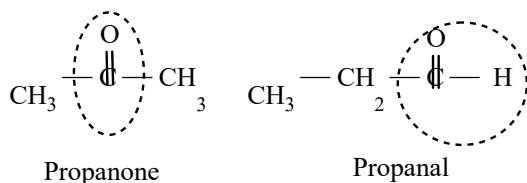


2,3-Dimethyl-4-oxobutanenitrile

NCERT Page no. 336

94. (4)

Propanone and propanal shows functional group isomerism because they possess different functional groups.



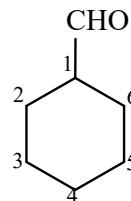
Propanone

Propanal

NCERT Page no. 340

95. (1)

There are 6 carbon atoms in the parent carbon chain of the given compound.



NCERT Page no. 335

96. (2)

For 9 carbon atoms 'Non' root word is used.

NCERT Page no. 331

97. (4)

$\text{CH}_3-\text{O}-\text{CH}_2-\text{CH}_2-\text{CH}_3$ and $\text{CH}_3-\text{CH}_2-\text{O}-\text{CH}_2-\text{CH}_3$ are metamers.

When different hydrocarbon groups are attached with a polyvalent atom/group then there is metamerism.

NCERT Page no. 340

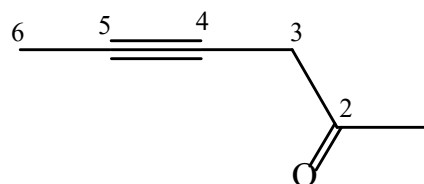
98. (1)

Chain isomer of each other.

NCERT Page no. 340

99. (2)

IUPAC name of the given compound is:



Hex-4-en-2-one

NCERT Page no. 335

100. (3)

The given compounds possess different functional groups hence they are functional isomers.



NCERT Page no. 340