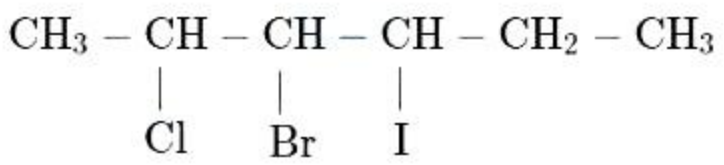
Q1: NTA Test 02 (Single Choice)

The correct IUPAC name of the compound is



(A) 4-Bromo-5-chloro-3-iodohexane

(B) 3-Bromo-2-chloro-4-iodohexane

(C) 3-Bromo-4-iodo -2-chlorohexane

(D) 2-Bromo-3-bromo-4-iodohexane

Q2: NTA Test 03 (Single Choice)

The IUPAC name of the product obtained by the oxidation of phenol with the help of chromic acid is

(A) cyclohexa-2, 4-diene-1, 4-diol

(B) cyclohexa-2, 4diene-1, 4-dione

(C) cyclohexa-2, 5-diene-1, 4-diol

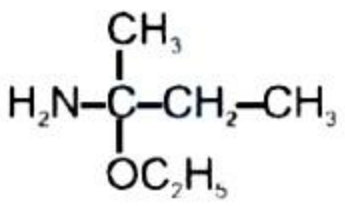
(D) cyclohexa-2, 5-diene-1, 4-dione

Q3: NTA Test 04 (Numerical)

Among the following, the total number of compounds containing at least one sp^3 hybridized carbon atom is/are -.

Acetylene, dimethyl ether, propan- 1 - ol, ethene, 2- chlorobutane

Q4: NTA Test 05 (Single Choice)

Correct IUPAC name for  is:

(A) 1-Ethoxy-1-ethyl-1-aminopropane

(B) 1-Ethoxy-1-amino-1-ethylpropane

(C) 1-Ethoxy-2-butanol

(D) 2-Ethoxybutan-2-amine

Q5: NTA Test 06 (Single Choice)

The sum of the number of σ and π bonds in 5-oxohexanoic acid is:

(A) 20

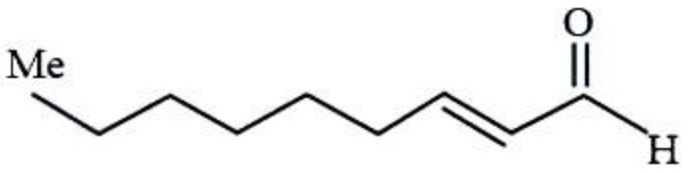
(B) 19

(C) 21

(D) 17

Q6: NTA Test 07 (Single Choice)

What is the IUPAC name of the following compounds?



(A) Non-2-en-1-al (cockroach repellent found in cucumber)

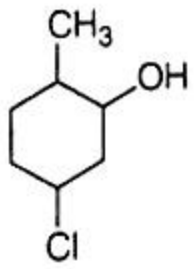
(B) Non-3-en-1-al (cockroach repellent found in cucumber)

(C) Non-4-en-2-al (cockroach repellent found in cucumber)

(D) Non-4-en-3-al (cockroach repellent found in cucumber)

Q7: NTA Test 08 (Single Choice)

Give the IUPAC name of the following structure



(A) 2-Methyl-5-chlorocyclohexanol

(B) 1-Chloro-4-methylcyclohexanol

(C) 5-Chloro-2-methylcyclohexanol

(D) 3-Chloro-2-methylcyclohexanol

Q8: NTA Test 09 (Single Choice)

IUPAC name of is :

(A) 3-Ethyl-4-methylhex-5-en-2-ol

(B) 4-Ethyl-3-methylhex-1-en-5-ol

(C) 3-Methyl-4-ethylhex-1-en-5-ol

(D) 4-Methyl-3-ethylhex-5-en-2-ol

Q9: NTA Test 10 (Single Choice)

Alkanamines have the general formula -

(A) $C_nH_{2n-1}N$

(B) $C_nH_{2n+3}N$

(C) $C_nH_{2n+1}N$

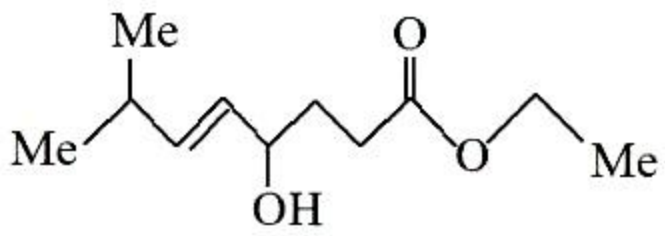
(D) $C_nH_{2n-3}N$

Q10: NTA Test 11 (Numerical)

How many optically active stereoisomers are possible for butane-2,3-diol?

Q11: NTA Test 12 (Single Choice)

Write the IUPAC names of the following structures?



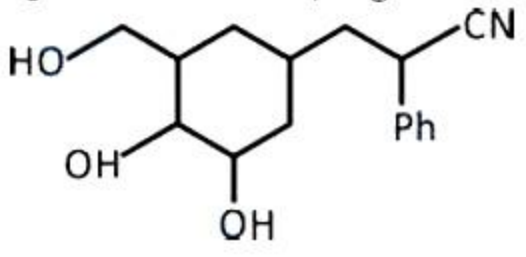
(A) Ethyl-2-hydroxy-6-methyloct-5-en-1-oate

(B) Ethyl-2-hydroxy-7-methyloct-4-en-1-oate

(C) Ethyl-1-hydroxy-7-methyloct-5-en-1-oate

(D) Ethyl-2-hydroxy-7-methyloct-5-en-1-oate

Q12: NTA Test 18 (Single Choice)



What is the IUPAC name of given compound?

(A) 3-(3,4-dihydroxy-5 hydroxymethylcyclohexyl)-2-phenylpropane nitrile

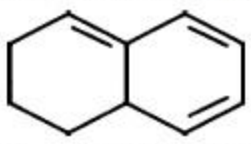
(B) 3-(4,5-dihydroxy-3 hydroxymethylcyclohexyl)-2-phenylpropane nitrile

(C) 5-(2-cyano-2-phenyl)ethyl-3-hydroxylmethylcyclohexane-1,2 diol

(D) 4-(2-cyano-2-phenyl)ethyl-6-hydroxylmethylcyclohexane-1,2 diol

Q13: NTA Test 19 (Numerical)

Find the value of $\frac{p+q}{3}$ for given structure

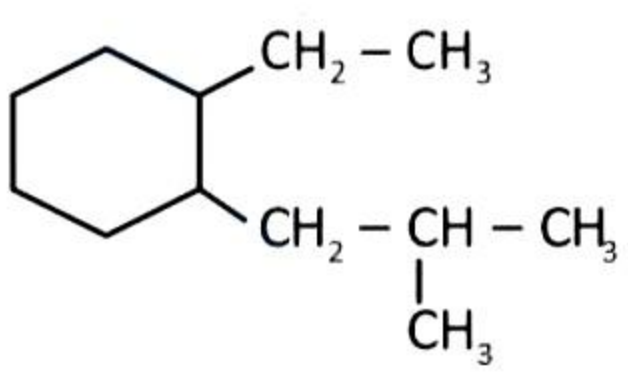


p = degree of unsturation (DU)

q = number of 2^{o} carbon

Q14: NTA Test 22 (Single Choice)

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



(A) 6, 3, 3

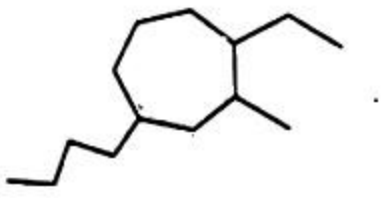
(B) 3, 6, 3

(C) 3, 6, 2

(D) 3, 2, 1

Q15: NTA Test 26 (Single Choice)

Provide the systematic name of the compound shown



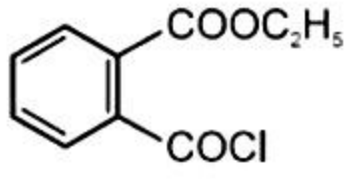
(A) 4-Butyl-2-ethyl-1-methylcycloheptane

(B) 1-Butyl-4-ethyl-3-methylcycloheptane

(C) 2-Butyl-4-ethyl-1-methylcycloheptane

(D) 4-Butyl-1-ethyl-2-methylcycloheptane

Q16: NTA Test 29 (Single Choice)

IUPAC name of the compound 

is

(A) 2-Chlorocarbonyl ethylbenzenecarboxylate

(B) 2-Carboxyethylbenzoyl chloride

(C) Ethyl 2-(chlorocarbonyl)benzenecarboxylate

(D) Ethyl 1-(chlorocarbonyl)benzenecarboxylate

Q17: NTA Test 32 (Single Choice)

How many isomers are possible for the alkyl group C_4H_9- ?

(A) Two

(B) Three

(C) Four

(D) Five

Q18: NTA Test 44 (Single Choice)

Which one is not an allylic halide?

(A) 3-chloro cyclo hex-1-ene

(B) 1-chloro but-1-ene

(C) 1-chloro but-2-ene

(D) 3-chloro prop-1-ene.

Answer Keys

Q1: (B) **Q2:** (D) **Q3:** 3.00

Q4: (D) **Q5:** (A) **Q6:** (A)

Q7: (C) **Q8:** (A) **Q9:** (B)

Q10: 2 **Q11:** (D) **Q12:** (A)

Q13: 3 **Q14:** (B) **Q15:** (D)

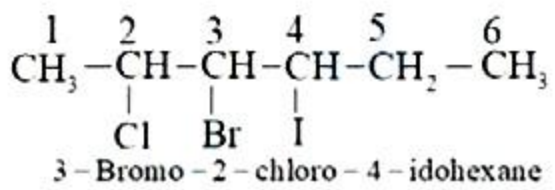
Q16: (C) **Q17:** (C) **Q18:** (B)

Solutions

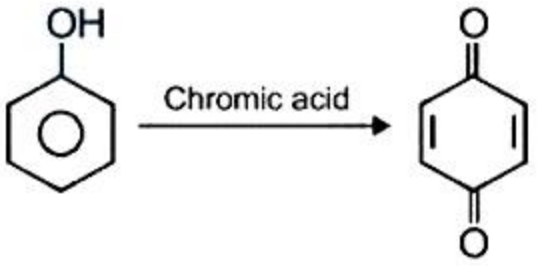
Q1: (B) 3-Bromo-2-chloro-4-iodohexane

The decreasing order of priority of prefix in numbering the carbon chain of an organic compound is

Bromo > Chloro > Iodo



Q2: (D) cyclohexa-2, 5-diene-1, 4-dione

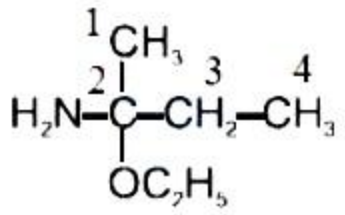


cyclohexa-2, 5-diene-1, 4-dione

Q3: 3.00

Hybridization of C -atom in given compounds is follows:
Acetylene (sp), dimethyl ether (sp^3),
Propan $-1-$ ol(sp^3), ethene (sp^2),
2-chlorobutane (sp^3).

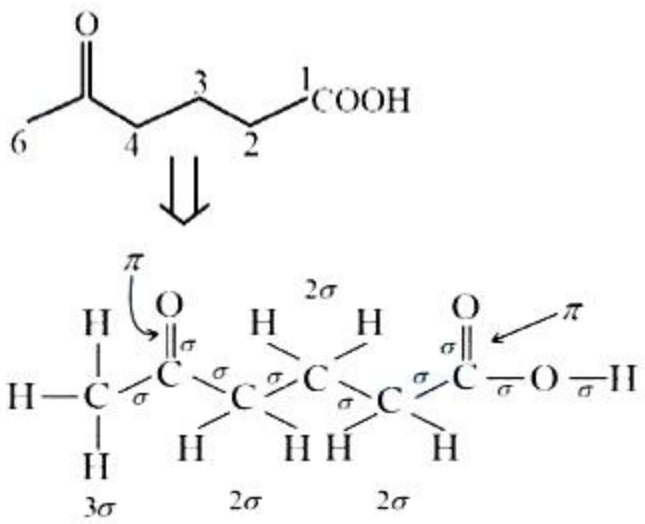
Q4: (D) 2-Ethoxybutan-2-amine



Its correct IUPAC name is 2-Ethoxybutan-2-amine

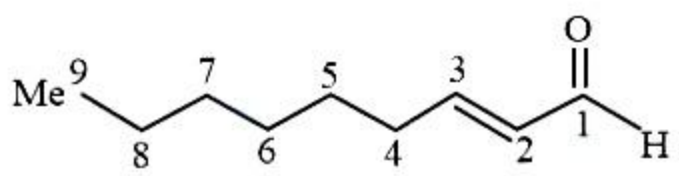
Q5: (A) 20

$(18\sigma, 2\pi)$

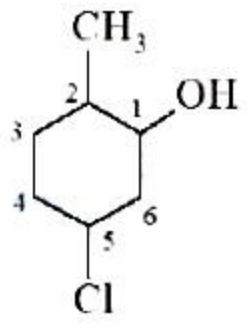


5-oxo-hexanoic acid contains $18\sigma-$ and $2\pi-$bonds. Hence, total number of $\sigma-$ and $\pi-$bonds will be 20

Q6: (A) Non-2-en-1-al (cockroach repellent found in cucumber)



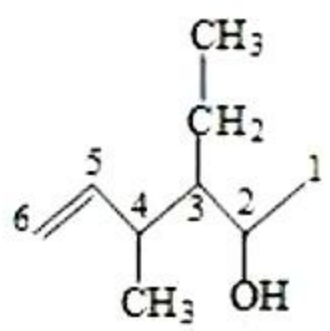
Q7: (C) 5-Chloro-2-methylcyclohexanol



IUPAC name of the given compound is:

5-Chloro-2-methylcyclohexanol

Q8: (A) 3-Ethyl-4-methylhex-5-en-2-ol



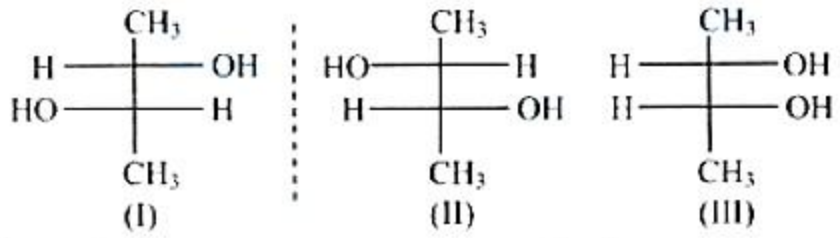
According to the priority of functional groups, OH is given top priority. Hence, the numbering starts from right side.

Q9: (B) $C_nH_{2n+3}N$

$C_nH_{2n+3}N$

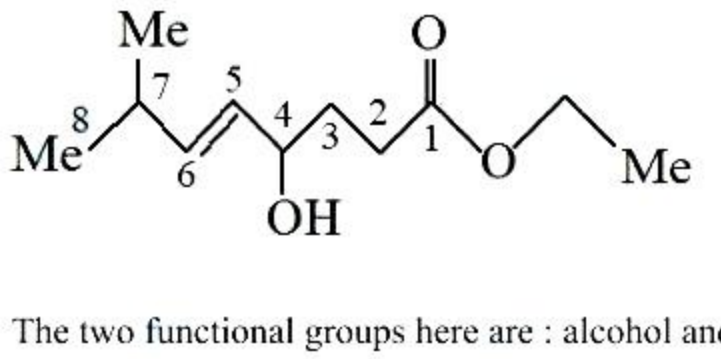
e.g. $C_2H_5NH_2$ (Ethylamine)

Q10: 2



(I) and (II) are optically active while (III) is optically inactive (meso form).

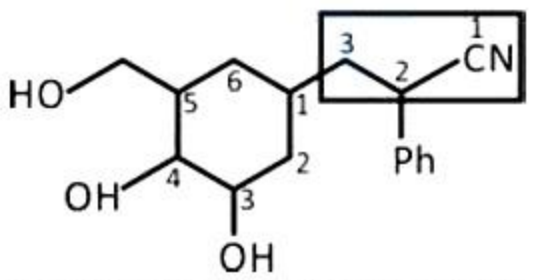
Q11: (D) Ethyl-2-hydroxy-7-methyloct-5-en-1-oate



The two functional groups here are : alcohol and ester.

Priority order : Ester > Alcohol

Q12: (A) 3-(3,4-dihydroxy-5 hydroxymethylcyclohexyl)-2-phenylpropane nitrile



Principal function group = cyanide

Suffix - Nitrile

Word root - prop

IUPAC Name: 3-(3,4-dihydroxy-5-hydroxy methyl cyclohexyl)-2-phenyl propane nitrile

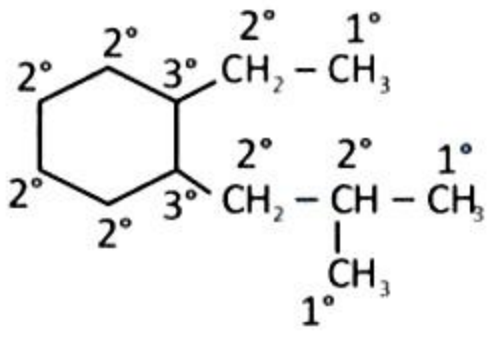
Q13: 3

$p = 2$ ring $+3\pi$ bond $= 5$

$q = 8, 2^{\circ}$ carbon present in the compound

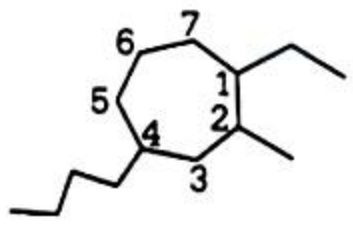
$\frac{p+q}{3} = \frac{2+8}{3} = \frac{10}{3} = 3.33$

Q14: (B) 3, 6, 3



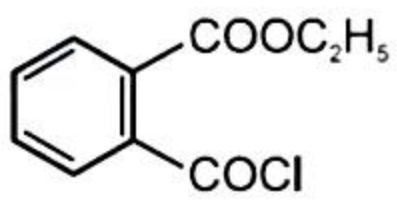
1° carbon $= 3,\ 2^{\circ}$ carbons $= 6,\ 3^{\circ}$ carbons $= 3$,

Q15: (D) 4-Butyl-1-ethyl-2-methylcycloheptane



The name of the compound is 4-Butyl-1-ethyl-2-methylcycloheptane.

Q16: (C) Ethyl 2-(chlorocarbonyl)benzenecarboxylate



Main functional group is ester

Ethyl 2-(chlorocarbonyl)benzenecarboxylate

Q17: (C) Four

(1) $CH_3-CH_2-CH_2-CH_2-$

(2) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2-$

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

(4) $CH_3-\overset{\displaystyle CH_3}{\overset{|}{\underset{\displaystyle CH_3}{\underset{|}{C}}}}-$

Q18: (B) 1-chloro but-1-ene

1-chloro but-1-ene $(CH_3 - CH = CH - Cl)$ is classified as a vinylic halide.