

IUPAC Nomenclatures

Question1

In carbinol system, sec-Butyl alcohol is named as

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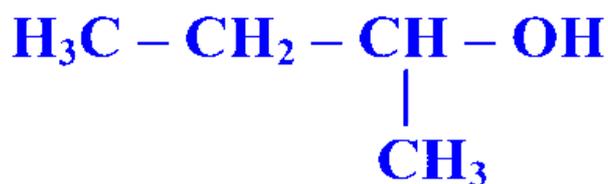
Options:

- A. Ethyl methyl carbinol
- B. sec-Butylcarbinol
- C. Isopropyl carbinol
- D. Diethylcarbinol

Answer: A

Solution:

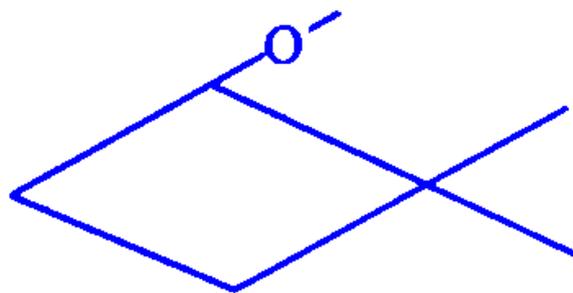
The structure of sec-butyl alcohol is



In carbinol system, the alkyl groups attached to the carbon carrying -OH group are named in alphabetical order. Then the suffix carbinol is added. Hence, sec-butyl alcohol is named as ethyl methyl carbinol.

Question2

What is IUPAC name of following compound?



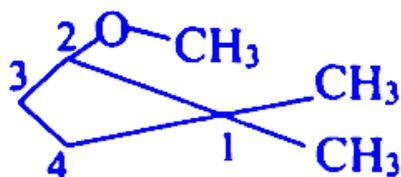
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Options:

- A. 1-Methoxy-2,2-dimethylbutane
- B. 2-Methoxy-1,1-dimethylbutane
- C. 1-Methoxy-2,2-dimethylcyclobutane
- D. 2-Methoxy-1,1-dimethylcyclobutane

Answer: D

Solution:



2-Methoxy-1,1-dimethylcyclobutane

2-Methoxy-1,1-dimethylcyclobutane

Question3

Which from following compounds does NOT contain oxygen as heteroatom?

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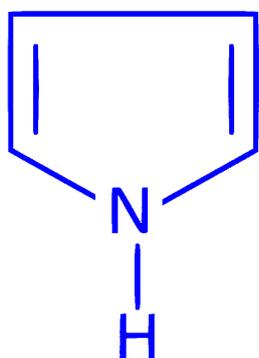
Options:

- A. Furan
- B. THF
- C. 4H-Pyran
- D. Pyrrole

Answer: D

Solution:

Pyrrole contains nitrogen as a heteroatom.



Pyrrole

Question4

Which of the following is correct IUPAC name of catechol?

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Options:

- A. Benzene-1,2-diol
- B. Benzene-1,3-diol

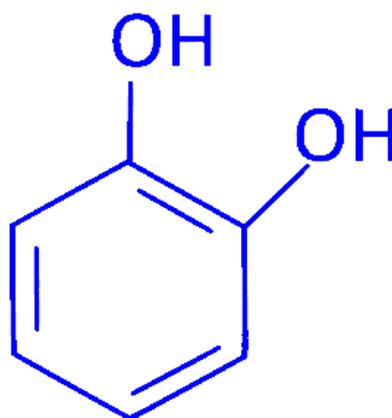


C. Benzene-1,4-diol

D. Benzene-1,3,5-triol

Answer: A

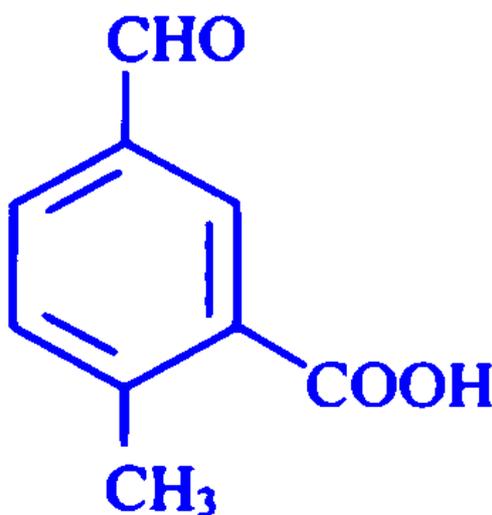
Solution:



Catechol
(Benzene – 1,2-diol)

Question5

What is IUPAC name of the following compound?



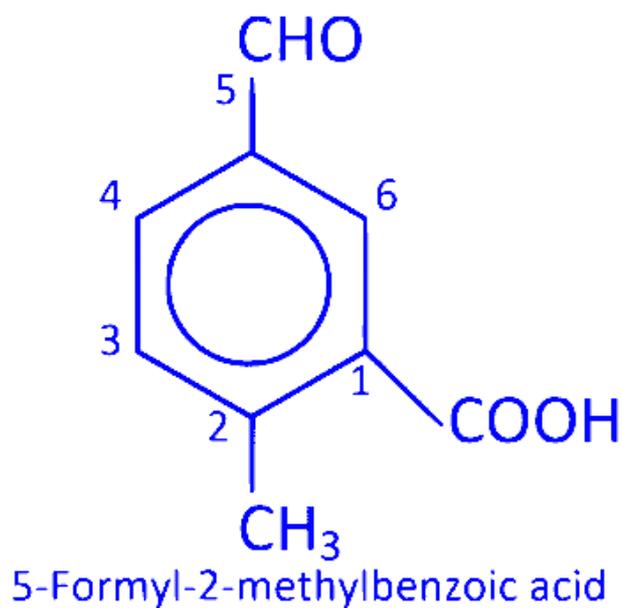
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Options:

- A. 3-Carboxy-4-methylbenzaldehyde
- B. 5-Carboxy-4-methylbenzaldehyde
- C. 3-Formyl-6-methylbenzoic acid
- D. 5-Formyl-2-methylbenzoic acid

Answer: D

Solution:



Question6

What is IUPAC name of hydroquinone?

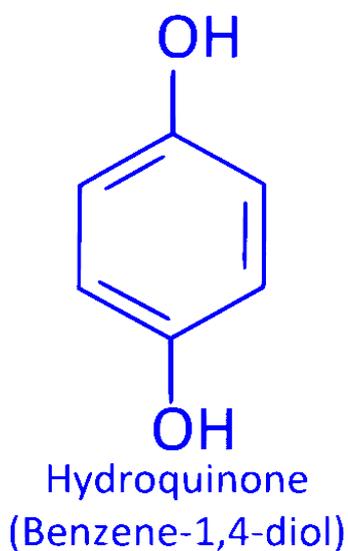
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Options:

- A. Benzene-1,2-diol
- B. Benzene-1,3-diol
- C. Benzene-1,4-diol
- D. Benzene-1,3,5-triol

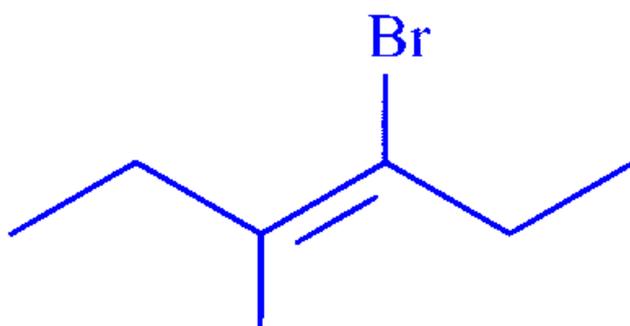
Answer: C

Solution:



Question7

What is IUPAC name of following compound?



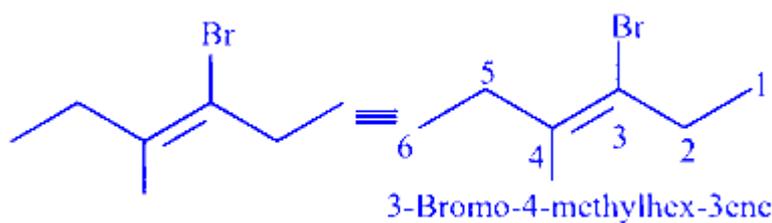
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Options:

- A. 3-Bromo-4-ethylbut-3-ene
- B. 3-Bromo-4-methylhex-3ene
- C. 4-Bromo-3-methylhex-3-ene
- D. 4-Bromo-4-ethyl-3-methylbut-3-ene

Answer: B

Solution:



Question8

Which from following functional groups has highest priority order for naming the polyfunctional group compounds?

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Options:

- A. -COCl
- B. -SO₃H
- C. -CHO
- D. -OH

Answer: B



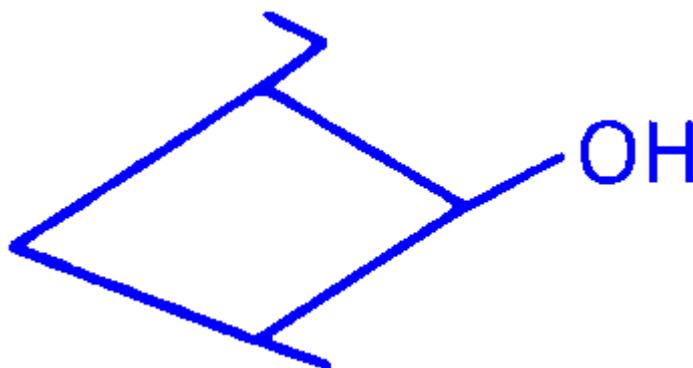
Solution:

The principal functional group is decided on the basis of the following order of priority:

- COOH > -SO₃H > -COOR > -COCl >
 - CONH₂ > -CN > -CHO > C = O > -OH >
 - NH₂ > C = C > -C ≡ C-
-

Question9

What is IUPAC name of the following compound?



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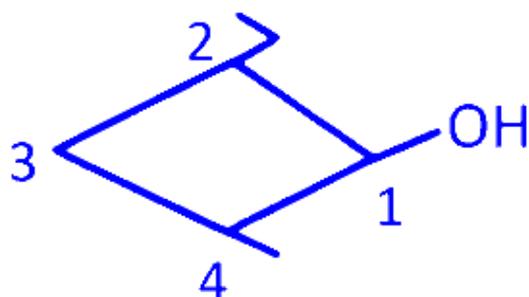
Options:

- A. 1-Ethyl-2-hydroxy-3-methyl cyclobutane
- B. 2-Ethyl-1-hydroxy-4-methyl cyclobutane
- C. 2-Ethyl-4-methyl cyclobutanol
- D. 4-Ethyl-2-methyl cyclobutanol

Answer: C

Solution:

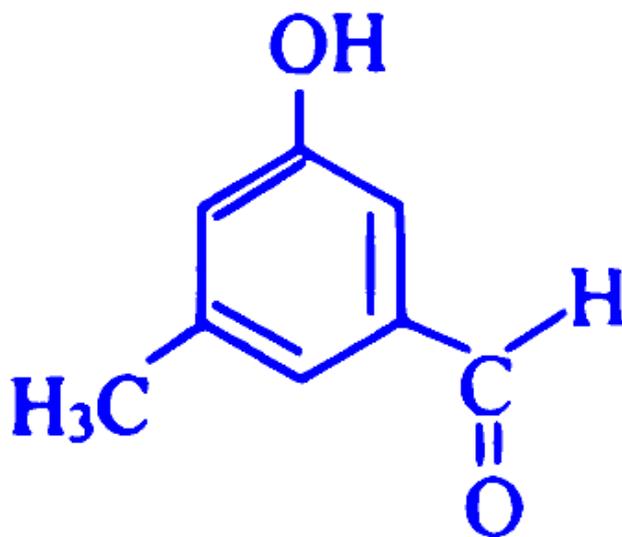




2-Ethyl-4-methylcyclobutanol

Question10

What is IUPAC name of the following compound?



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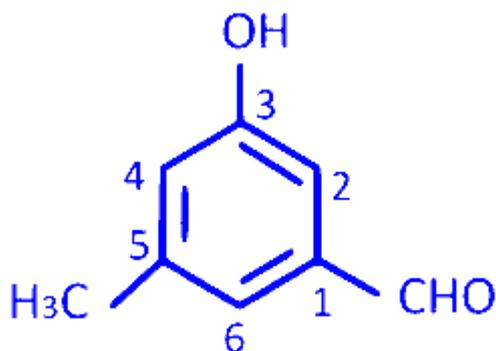
Options:

- A. 3-Formyl-5-methylphenol
- B. 5-Formyl-3-methylphenol
- C. 3-Hydroxy-5-methylbenzaldehyde
- D. 5-Hydroxy-3-methylbenzaldehyde



Answer: C

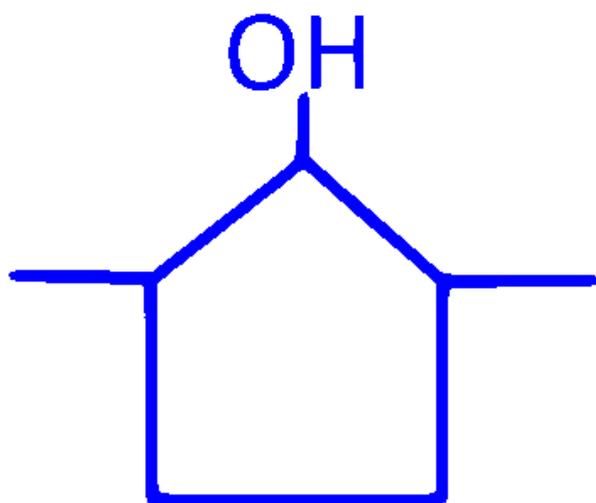
Solution:



3- Hydroxy-5-methylbenzaldehyde

Question11

What is the IUPAC name of the following compound?



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Options:

A. 2,5-Dimethylpentan-1-ol



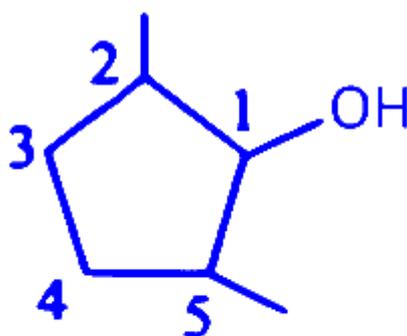
B. 1,3-Dimethylpentan-2-ol

C. 2,5-Dimethylcyclopentanol

D. 1,3-Dimethylcyclopentan-2-ol

Answer: C

Solution:



2,5-Dimethylcyclopentanol

Question12

Which from following functional groups has highest priority order for naming the poly functional compound?

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Options:

A. -CN

B. -CONH₂

C. -C ≡ C-

D. -NH₂

Answer: B



Solution:

According to the IUPAC rules (as followed by NCERT), the priority order for functional groups in naming polyfunctional organic compounds is:

1. Carboxylic acids ($-COOH$) and their derivatives (like $-CONH_2$ for amides)
2. Nitriles ($-CN$)
3. Aldehydes ($-CHO$)
4. Ketones ($>C=O$)
5. Alcohols ($-OH$)
6. Amines ($-NH_2$)
7. Alkynes ($C \equiv C$)

Let us match given options:

- Option A: $-CN$ (Nitrile)
- Option B: $-CONH_2$ (Amide, derivative of carboxylic acid)
- Option C: $-C \equiv C-$ (Alkyne)
- Option D: $-NH_2$ (Amino group, amine)

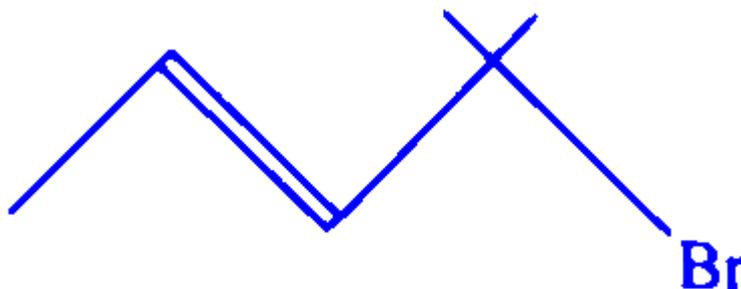
Highest priority among these is given to amide ($-CONH_2$).

Correct answer:

Option B: $-CONH_2$

Question13

What is IUPAC name of following compound?



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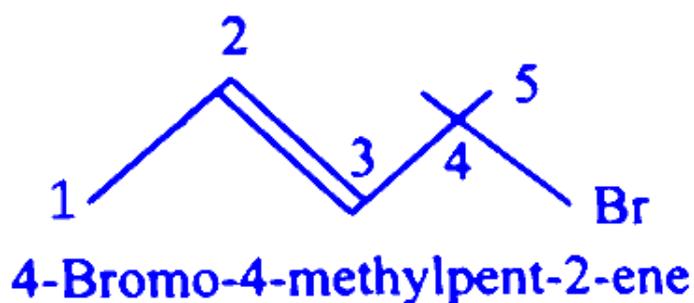


Options:

- A. 1-Bromo-1,1-dimethylbut-2-ene
- B. 4-Bromo-4-methylpent-2-ene
- C. 2-Bromo-2-methylpent-3-ene
- D. 4-Bromo-4,4-dimethylbut-2-ene

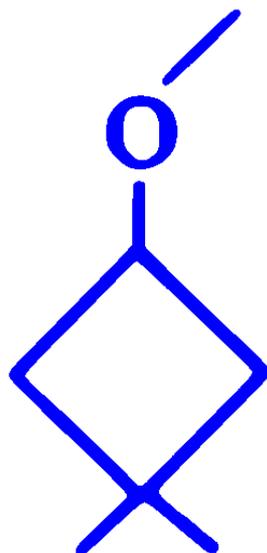
Answer: B

Solution:



Question14

What is IUPAC name of the following compound?



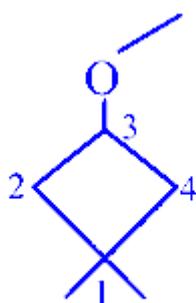
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Options:

- A. 1-Methoxy-3,3-dimethylcyclobutane
- B. 3-Methoxy-1,1-dimethylcyclobutane
- C. 3,3-dimethylcyclobutoxymethane
- D. 1-methoxy-3-isopropyl butane

Answer: B

Solution:



3-Methoxy-1,1-dimethylcyclobutane

Question15

Select the correct IUPAC name of pyrogallol.

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Options:

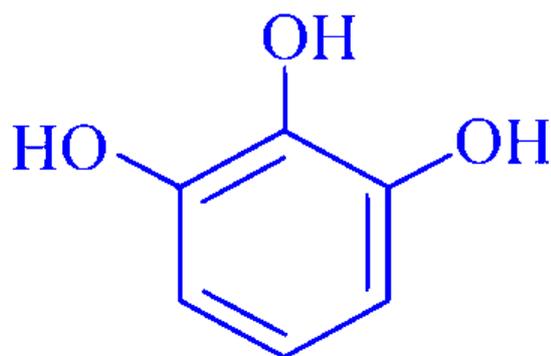
- A. Benzene-1,3-diol
- B. Benzene-1,4-diol

C. Benzene-1,3,5-triol

D. Benzene-1,2,3-triol

Answer: D

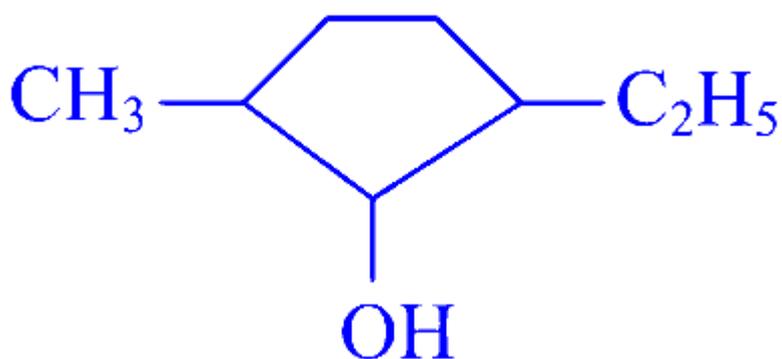
Solution:



Pyrogallol
(Benzene-1,2,3-triol)

Question 16

What is the IUPAC name of the following compound?



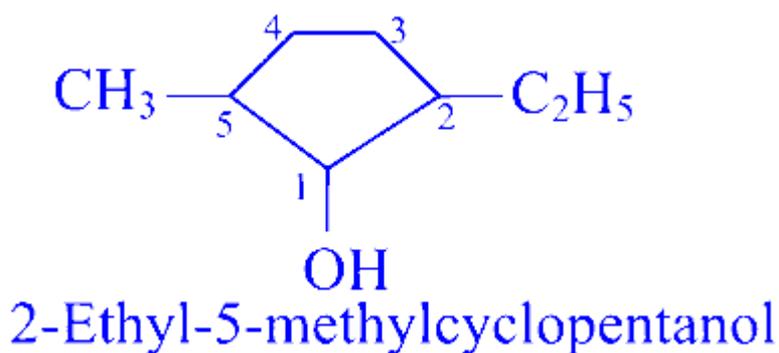
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Options:

- A. 2-Ethyl-3-methylcyclopentanol
- B. 2-Ethyl-5-methylcyclopentanol
- C. 2-Methyl-3-ethylcyclopentanol
- D. 1-Methyl-3-ethylcyclopentan-2-ol

Answer: B

Solution:



Question17

Which from following compounds contains oxygen as a heteroatom?

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Options:

- A. Furan
- B. Pyridine

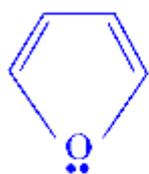


C. Thiophene

D. Piperidine

Answer: A

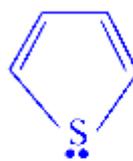
Solution:



Furan



Pyridine



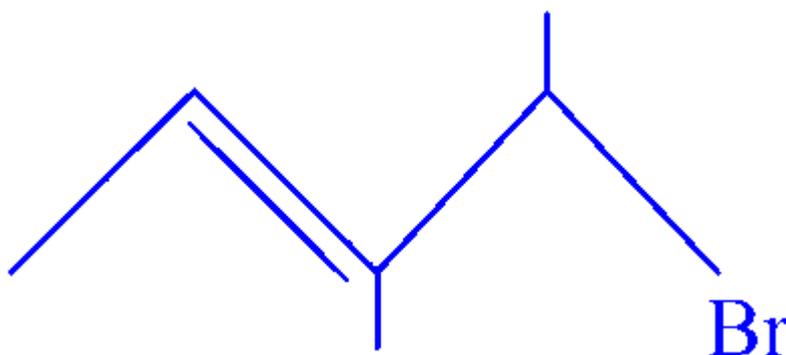
Thiophene



Piperidine

Question 18

What is the IUPAC name of following compound?



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Options:

A. 1-Bromo -1,2-dimethylbut-2-ene

B. 4-Bromo-3-methylpent-2-ene

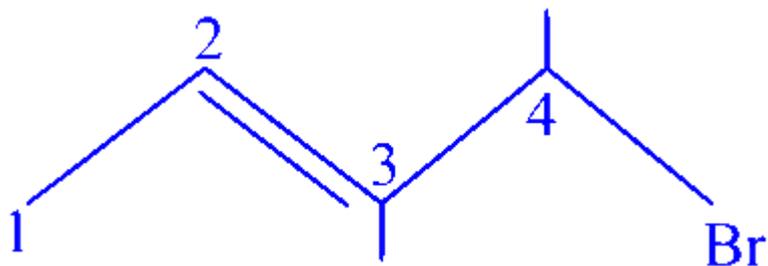


C. 4-Bromo-3, 4-dimethylbut-2-ene

D. 2-Bromo-3-methylpent-3-ene

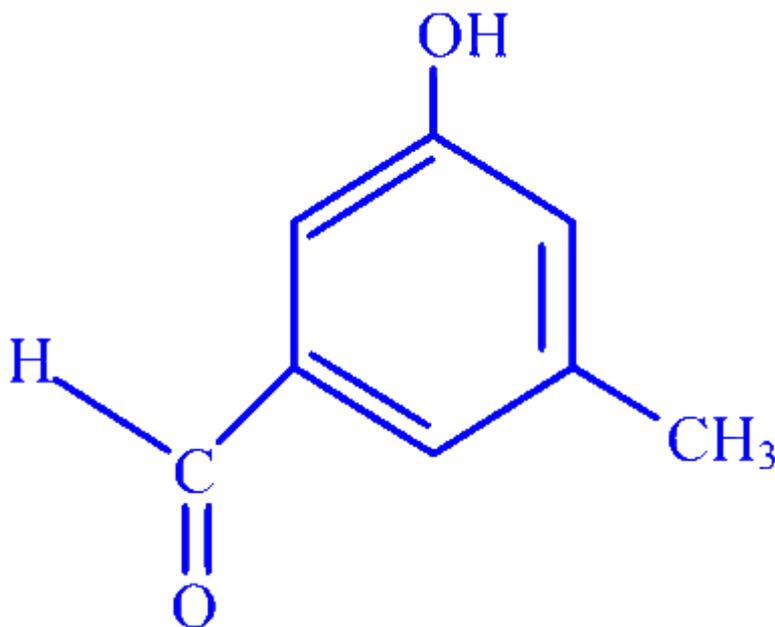
Answer: B

Solution:



Question19

What is IUPAC name of the following compound?



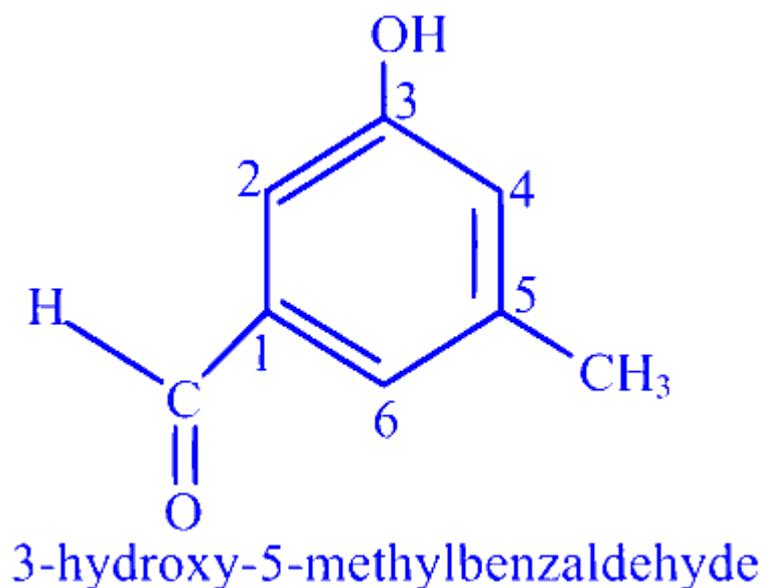
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Options:

- A. 3-formyl-5-methylphenol
- B. 5-formyl-3-methylphenol
- C. 3-hydroxy-5-methylbenzaldehyde
- D. 5-hydroxy-3-methylbenzaldehyde

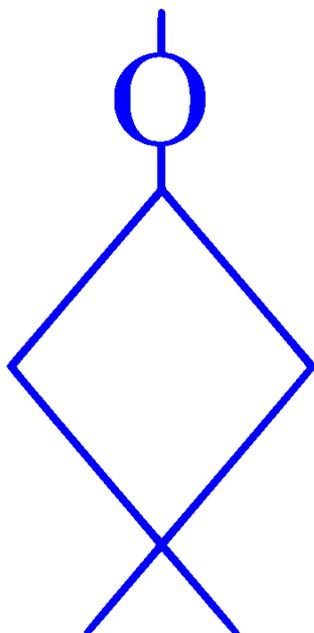
Answer: C

Solution:



Question20

What is IUPAC name of following compound?



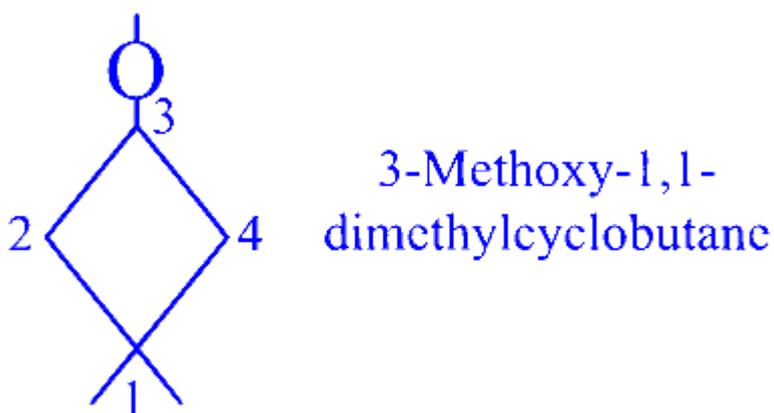
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Options:

- A. 1-Methoxy-3,3-dimethylcyclobutane
- B. 3-Methoxy-1,1-dimethylcyclobutane
- C. 3,3-dimethylcyclobutoxymethane
- D. 1-Methoxy-3-isopropylbutane

Answer: B

Solution:



Question21

Which of the following compounds contains S atom in its ring?

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Options:

A. Nitromethane

B. Pyran

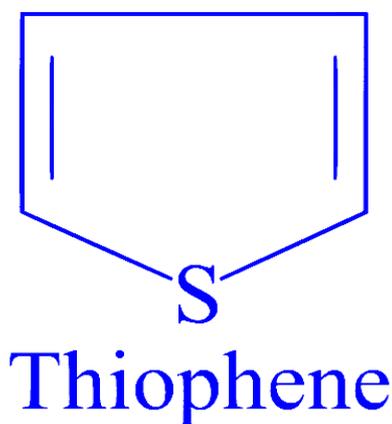
C. Furan

D. Thiophene

Answer: D

Solution:

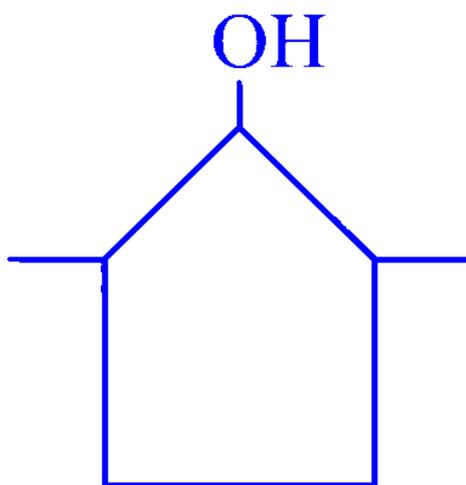
The structure of thiophene is



Question22

What is IUPAC name of following compound?





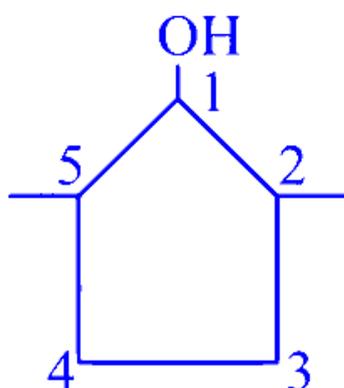
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Options:

- A. 2,5-Dimethylpentan-1-ol
- B. 1,3-Dimethylpentan-2-ol
- C. 2,5-Dimethylcyclopentanol
- D. 1,3-Dimethylcyclopentane-2-ol

Answer: C

Solution:

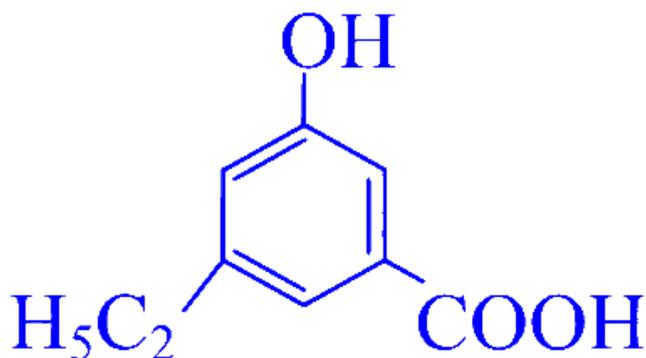


2,5-Dimethylcyclopentanol



Question23

What is IUPAC name of following compound?



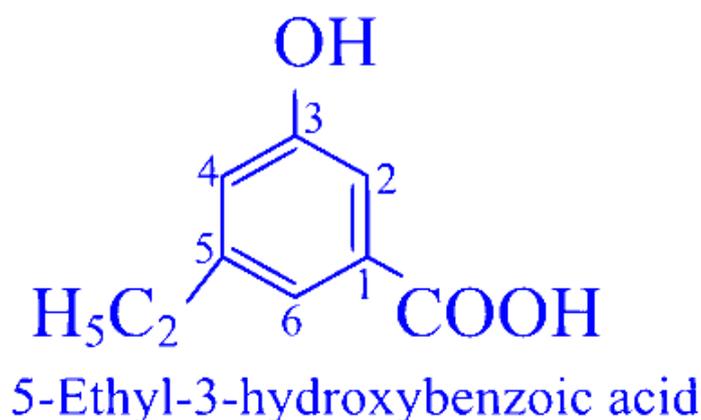
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Options:

- A. 3-Carboxy-5-ethyl phenol
- B. 5-Carboxy-3-ethyl phenol
- C. 3-Ethyl-5-hydroxy benzoic acid
- D. 5-Ethyl-3-hydroxy benzoic acid

Answer: D

Solution:



Question24

Identify the correct pair of molecule and the heteroatom present in it respectively from following:

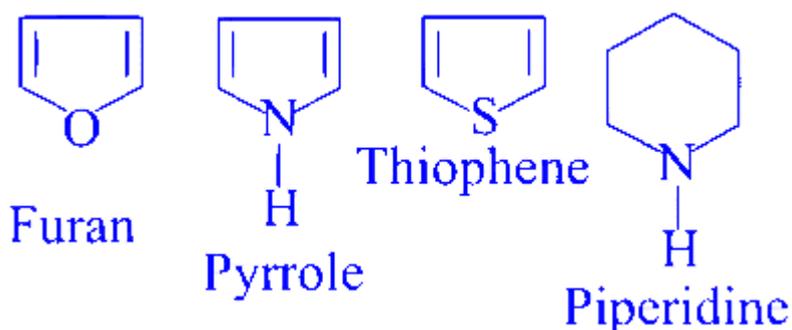
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Options:

- A. Furan-S
- B. Pyrrole-N
- C. Thiophene-O
- D. Piperidine-S

Answer: B

Solution:



Question25

The common name of Benzene-1, 2, 3-triol is

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Options:

A. Phloroglucinol

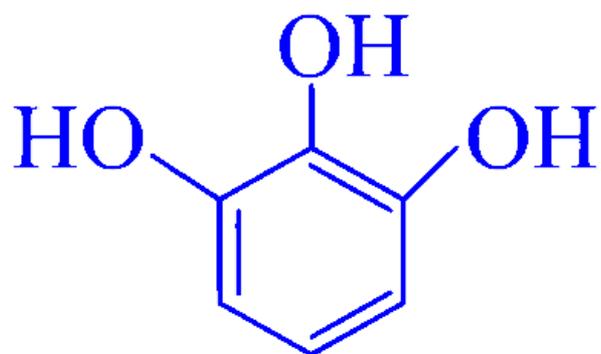
B. Pyrogallol

C. Quinol

D. Catechol

Answer: B

Solution:

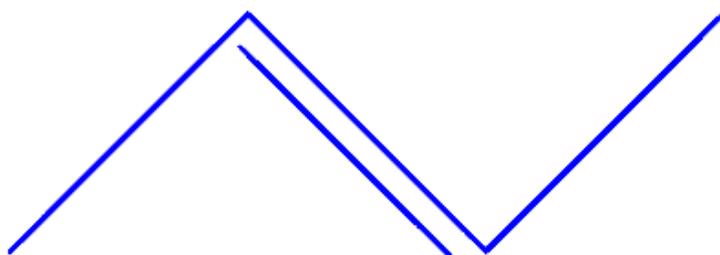


Benzene-1,2,3-triol

Common name : Pyrogallol

Question26

Identify the number of moles of H atoms present in n moles of organic compound represented as



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Options:

A. 4 n

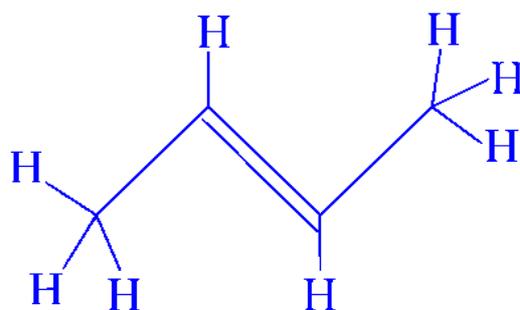
B. 6 n

C. 8 n

D. 2 n

Answer: C

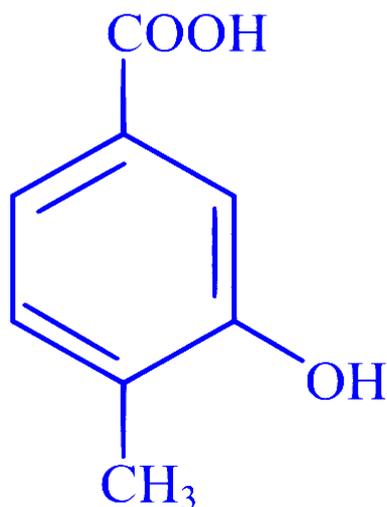
Solution:



∴ 'n' moles of organic compound will have 8n moles of H atoms.

Question27

What is IUPAC name of the following compound?



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Options:

- A. 3-Carboxy-6-methylphenol
- B. 5-Carboxy-2-methylphenol
- C. 3-Hydroxy-4-methylbenzoic acid
- D. 4-methyl-5-hydroxybenzoic acid

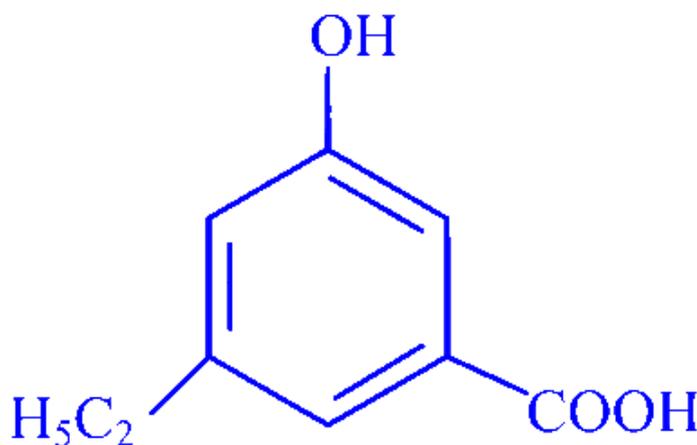
Answer: C

Solution:

Carboxylic acid functional group will be given more priority than hydroxyl group (OH)

Question28

What is IUPAC name of the following compound?



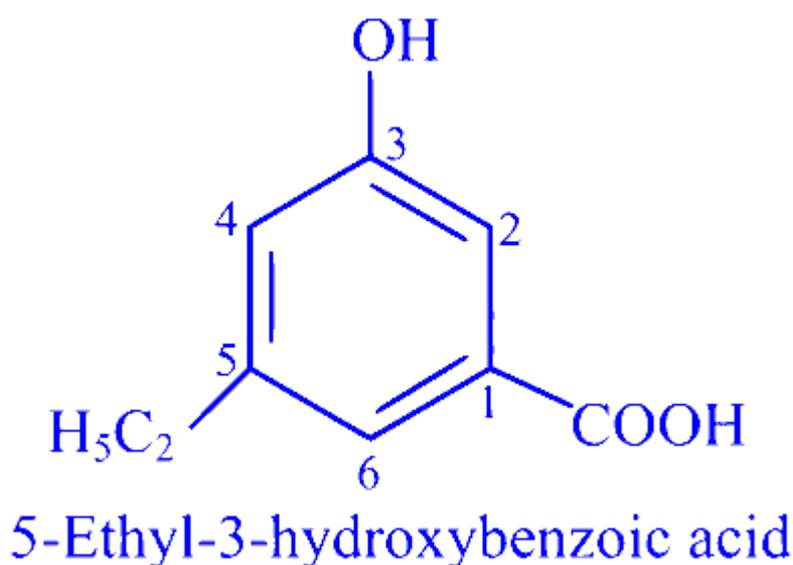
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Options:

- A. 3-Carboxy-5-ethylphenol
- B. 5-Carboxy-3-ethylphenol
- C. 3-Ethyl-5-hydroxybenzoic acid
- D. 5-Ethyl-3-hydroxybenzoic acid

Answer: D

Solution:

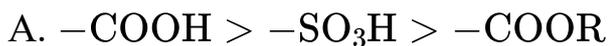


Question29

Which from following is a correct priority order for selection of principal functional group for nomenclature of polyfunctional compound?

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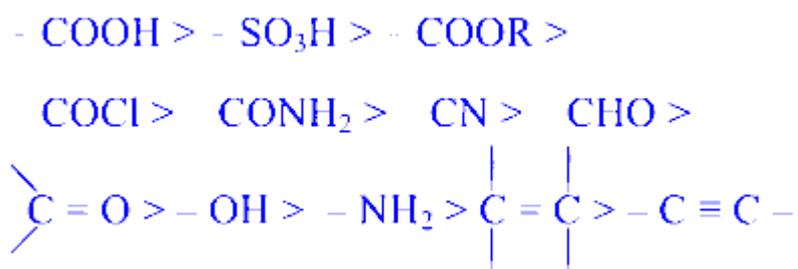
Options:



Answer: A

Solution:

The principal functional group is decided on the basis of the following order of priority:



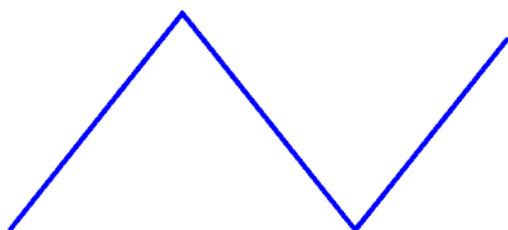
Question30

Identify the bond line formula for propan-1-ol

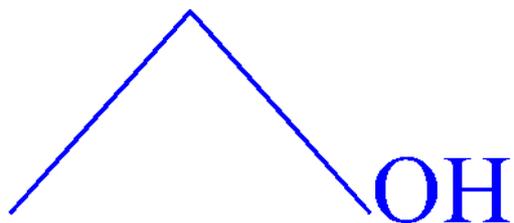
MHT CET 2024 9th May Morning Shift

Options:

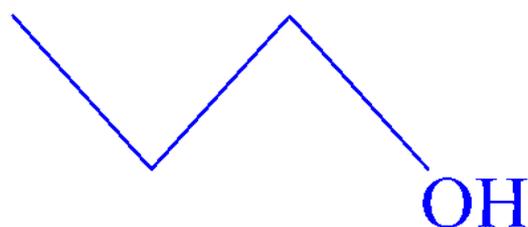
A.



B.



C.

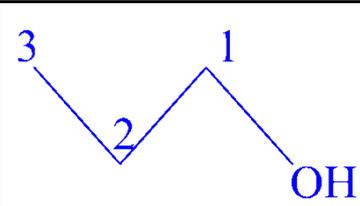


D.



Answer: C

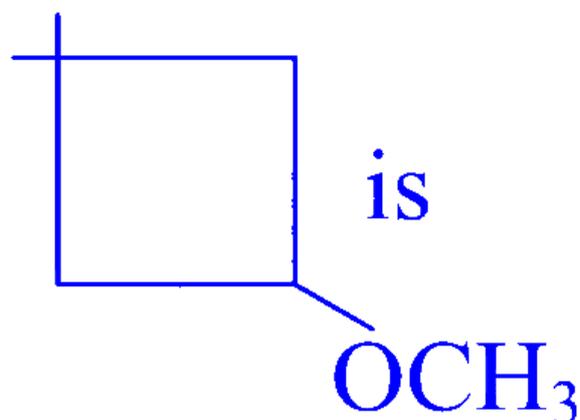
Solution:

IUPAC name	Structural (bond line) formula
Propan-1-ol	 <p>A skeletal structure of a three-carbon chain with a hydroxyl group (-OH) at the end. The carbons are numbered 1, 2, and 3 from right to left, starting with the carbon bearing the hydroxyl group as carbon 1.</p>

Question31

IUPAC name of the compound





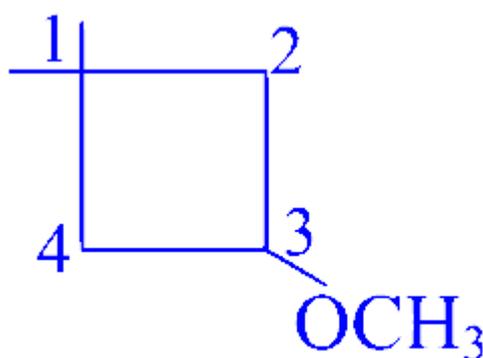
MHT CET 2024 9th May Morning Shift

Options:

- A. 1-Methoxy-3, 3-dimethylbutane
- B. 1-Methoxy-3, 3-dimethylcyclobutane
- C. 3-Methoxy-1,1-dimethylbutane
- D. 3-Methoxy-1, 1-dimethylcyclobutane

Answer: D

Solution:



3-Methoxy-1,1-dimethylcyclobutane

Question32



Identify name of



from following.

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Options:

- A. Benzene sulphonic acid
- B. Sodium benzene sulphonate
- C. Sodium phenoxide
- D. Benzene diazonium sulphate

Answer: B

Solution:

The structure shown is a **benzene ring attached to $-\text{SO}_3\text{Na}$** .

This corresponds to the **sodium salt of benzene sulphonic acid** , i.e.:

Sodium benzene sulphonate

Correct answer: B

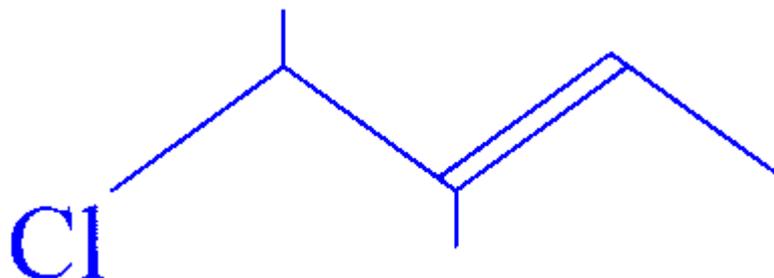
Why others are incorrect:

- **Benzene sulphonic acid** → would be $-\text{SO}_3\text{H}$, not $-\text{SO}_3\text{Na}$
- **Sodium phenoxide** → would have $-\text{ONa}$
- **Benzene diazonium sulphate** → contains $-\text{N}_2^+$ group

Answer: Sodium benzene sulphonate

Question33

What is the IUPAC name of following compound?



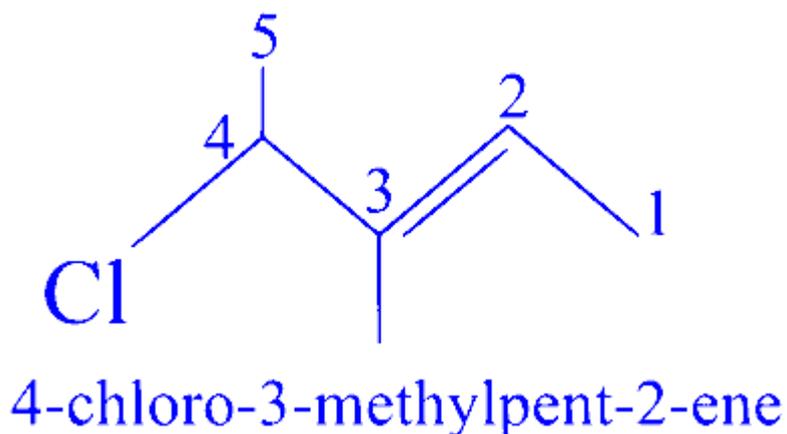
MHT CET 2024 4th May Evening Shift

Options:

- A. 1-chloro-1,2-dimethylbut-2-ene
- B. 4-chloro-3,4-dimethylbut-2-ene
- C. 4-chloro-3-methylpent-2-ene
- D. 2-chloro-3-methylpent-3-ene

Answer: C

Solution:



Question34

Which of the following is IUPAC name of hydroquinone?

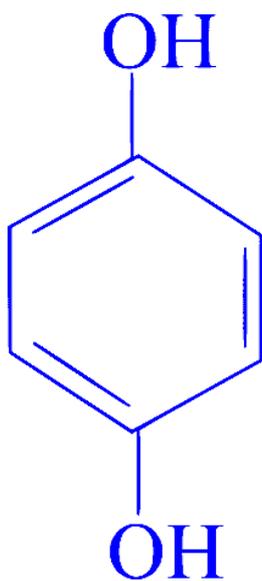
MHT CET 2024 4th May Evening Shift

Options:

- A. Benzene-1, 2-diol
- B. Benzene-1, 3-diol
- C. Benzene-1, 4-diol
- D. Benzene-1,3,5-triol

Answer: C

Solution:



Hydroquinone
(Benzene-1, 4-diol)



Question35

What is IUPAC name of Acrylic acid?

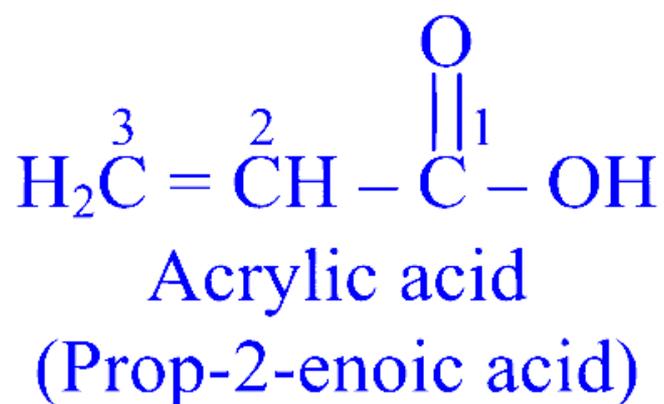
MHT CET 2024 4th May Morning Shift

Options:

- A. Propanoic acid
- B. Prop-2-enoic acid
- C. 2-Methylpropanoic acid
- D. 2-Hydroxypropanoic acid

Answer: B

Solution:



Question36

What is IUPAC name of Ethylmethylisopropylamine?



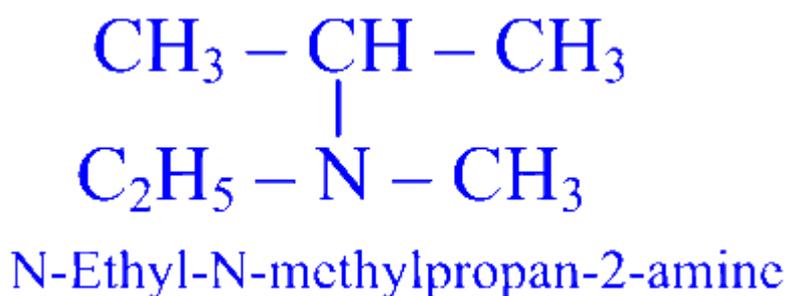
MHT CET 2024 4th May Morning Shift

Options:

- A. N -Methyl-N-isopropylethanamine
- B. N -Ethyl-N-methyl propan-1-amine
- C. N-Ethyl-N-methylpropan-2-amine
- D. N -Ethyl- N -isopropylmethanamine

Answer: C

Solution:



Question37

Which from following groups is selected as principal functional group for nomenclature of a polyfunctional compound according to IUPAC system?

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Options:

- A. $-\text{CONH}_2$
- B. $-\text{CN}$

C. $-\text{OH}$

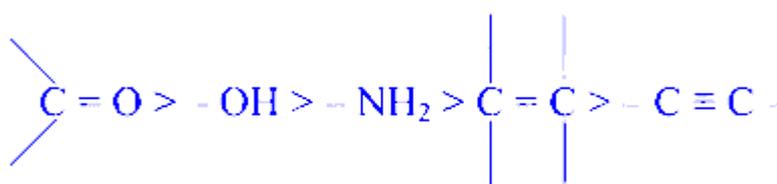
D. $-\text{C} \equiv \text{C}-$

Answer: A

Solution:

The principal functional group is decided on the basis of the following order of priority :

$-\text{COOH} > -\text{SO}_3\text{H} > -\text{COOR} > -\text{COCl}$
 $> -\text{CONH}_2 > -\text{CN} > -\text{CHO} >$



Question38

What is IUPAC name of propylene glycerol?

MHT CET 2024 3rd May Morning Shift

Options:

A. Propane-1,2-diol

B. Propane-1,3-diol

C. Propene-1,2,3-triol

D. Propane-1,2,3-triol

Answer: D

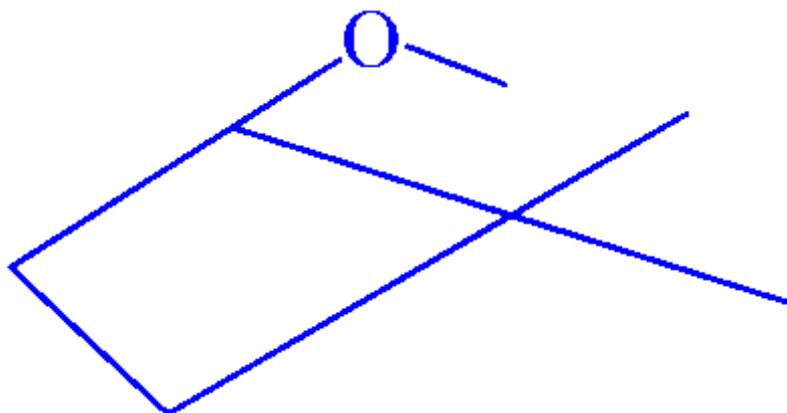
Solution:



Structural Formula	Common/Trivial Name	IUPAC name
$\text{CH}_2(\text{OH}) - \text{CH}(\text{OH}) - \text{CH}_2(\text{OH})$	Propylene glycerol	Propane-1,2,3-triol

Question39

What is the IUPAC name of following compound?



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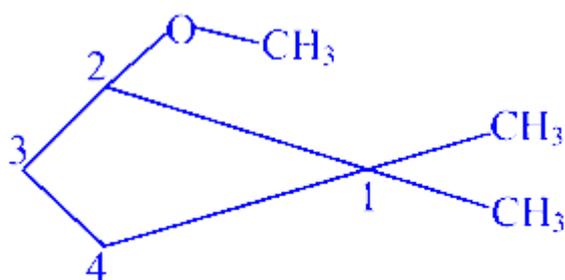
Options:

- A. 1-Methoxy - 2,2 - dimethylcyclobutane
- B. 1 - Methoxy -4, 4-dimethylcyclobutane
- C. 2 - Methoxy - 1,1 - dimethylcyclobutane
- D. 2,2 - dimethylcyclobutoxymethane

Answer: C

Solution:

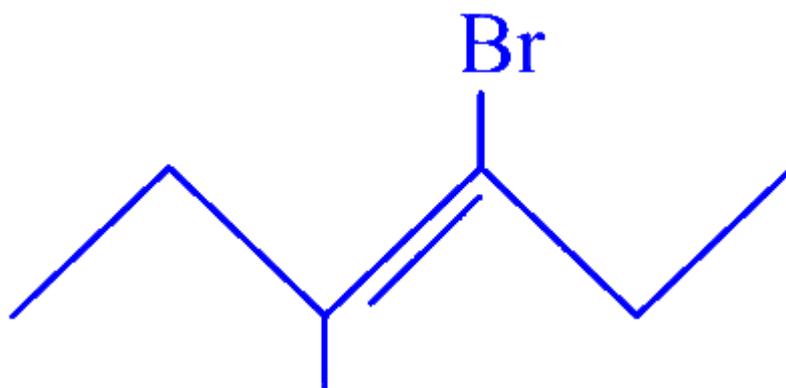




2-Methoxy-1,1-dimethylcyclobutane

Question40

What is IUPAC name of the following compound?



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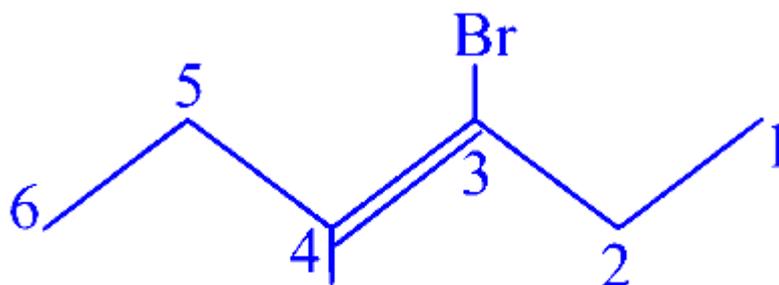
Options:

- A. 3 - Bromo - 4 - ethylbut - 3 - ene
- B. 3 - Bromo - 4 - methylhex - 3 - ene
- C. 4 - Bromo - 3 - methylhex - 3 - ene
- D. 4-Bromo - 4 - ethyl - 3 - methylbut - 3 - ene

Answer: B



Solution:



3-Bromo-4-methylhex-3-ene

Question41

What is IUPAC name of $(\text{CH}_3)_4\text{C}$?

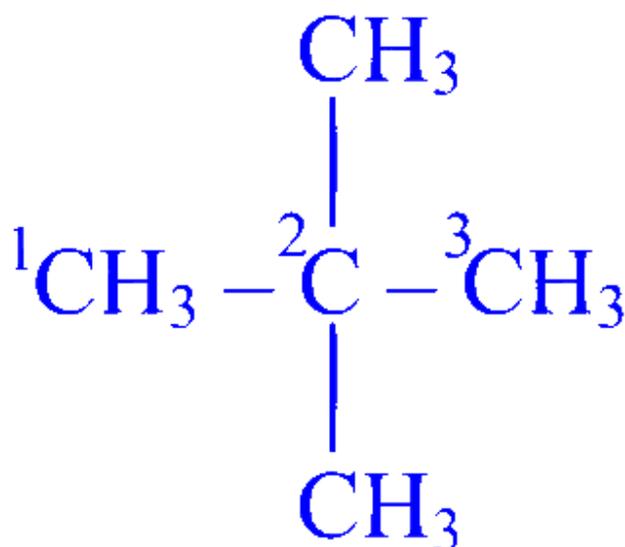
MHT CET 2024 2nd May Evening Shift

Options:

- A. Neopentane
- B. 2-Methylbutane
- C. 2-Methylpropane
- D. 2,2-Dimethylpropane

Answer: D

Solution:



2,2,-Dimethylpropane

Question42

Which functional group from following is considered as principal functional group if polyfunctional compound is to be named by IUPAC system?

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Options:

A. $-\text{CHO}$

B. $-\text{OH}$

C. $-\text{NH}_2$

D. $-\text{C} \equiv \text{C}-$

Answer: A



Solution:

To determine which functional group is considered the principal functional group when naming a polyfunctional compound according to the IUPAC system, we need to refer to the **IUPAC priority order of functional groups**. This priority order dictates which functional group takes precedence in naming when multiple functional groups are present in a compound.

Given Functional Groups:

Option A: $-\text{CHO}$ (Aldehyde group)

Option B: $-\text{OH}$ (Hydroxy group, Alcohol)

Option C: $-\text{NH}_2$ (Amino group, Amine)

Option D: $-\text{C} \equiv \text{C}-$ (Alkyne group)

IUPAC Priority Order of Functional Groups:

Below is a simplified list of common functional groups arranged in decreasing order of priority for nomenclature purposes:

Carboxylic Acids $-\text{COOH}$

Anhydrides

Esters $-\text{COOR}$

Acid Halides $-\text{COX}$

Amides $-\text{CONH}_2$

Nitriles $-\text{CN}$

Aldehydes $-\text{CHO}$

Ketones $-\text{CO}$

Alcohols $-\text{OH}$

Thiols $-\text{SH}$

Amines $-\text{NH}_2$

Ethers $-\text{OR}$

Alkenes $\text{C} = \text{C}$

Alkynes $\text{C} \equiv \text{C}$

Halides $-\text{X}$ (where $\text{X} = \text{F}, \text{Cl}, \text{Br}, \text{I}$)

Analysis of the Given Options:

1. Aldehyde Group ($-\text{CHO}$)



Position in Priority List: 7

Suffix in Nomenclature: -al

Example: Ethanal (CH_3CHO)

2. Alcohol Group ($-\text{OH}$)

Position in Priority List: 9

Suffix in Nomenclature: -ol

Example: Ethanol ($\text{CH}_3\text{CH}_2\text{OH}$)

3. Amino Group ($-\text{NH}_2$)

Position in Priority List: 11

Suffix in Nomenclature: -amine

Example: Ethylamine ($\text{CH}_3\text{CH}_2\text{NH}_2$)

4. Alkyne Group ($\text{C} \equiv \text{C}$)

Position in Priority List: 14

Suffix in Nomenclature: -yne

Example: Ethyne ($\text{HC} \equiv \text{CH}$)

Determining the Principal Functional Group:

Highest Priority: The functional group **higher up in the priority list** is considered the principal functional group when naming the compound.

Comparison of Given Options:

Aldehyde Group ($-\text{CHO}$) is **7th** in the priority list.

Alcohol Group ($-\text{OH}$) is **9th**.

Amino Group ($-\text{NH}_2$) is **11th**.

Alkyne Group ($\text{C} \equiv \text{C}$) is **14th**.

Therefore, the aldehyde group ($-\text{CHO}$) has the highest priority among the given options.

Implications for IUPAC Naming:

When an aldehyde group is present along with other lower-priority functional groups, it is considered the **principal functional group**.

The compound's name will end with the suffix **-al**, indicating the presence of an aldehyde.

Other functional groups will be treated as substituents and will be indicated using appropriate prefixes (e.g., hydroxy- for $-\text{OH}$, amino- for $-\text{NH}_2$).



Example:

Compound: $\text{HOCH}_2\text{CH}_2\text{CHNH}_2\text{CHO}$

Functional Groups Present:

Aldehyde ($-\text{CHO}$)

Alcohol ($-\text{OH}$)

Amine ($-\text{NH}_2$)

Naming Steps:

Identify the Principal Functional Group: Aldehyde ($-\text{CHO}$)

Longest Carbon Chain: Includes the aldehyde carbon.

Number the Chain: Start numbering from the aldehyde carbon (carbon 1).

Identify Substituents and Their Positions:

Hydroxy group at carbon 2.

Amino group at carbon 3.

Construct the Name:

Substituents: 3-Amino-2-hydroxy

Parent Chain: Butanal (since the chain has 4 carbons)

Final IUPAC Name: 3-Amino-2-hydroxybutanal

Conclusion:

Option A ($-\text{CHO}$) is the functional group considered as the principal functional group in IUPAC nomenclature for polyfunctional compounds among the given options.

This is because the aldehyde group has the highest priority according to the IUPAC priority rules.

Answer: Option A

Question43

What is the number of sp^3 hybrid carbon atoms in $\text{HO}(\text{CH}_2)_3\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$?



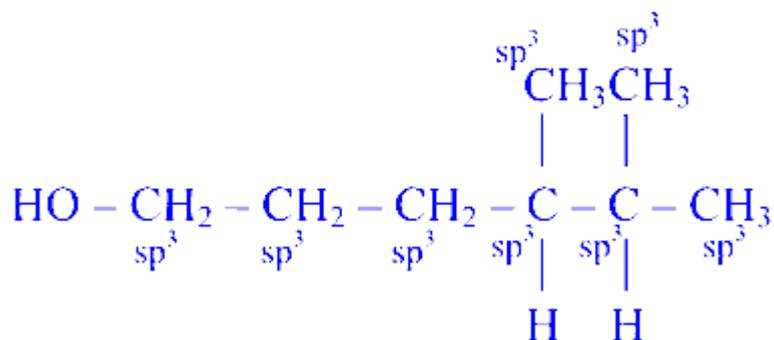
MHT CET 2023 14th May Evening Shift

Options:

- A. Five
- B. Two
- C. Eight
- D. Four

Answer: C

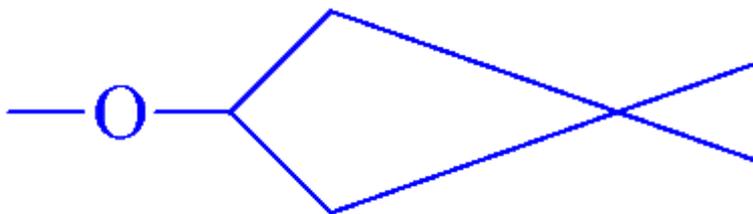
Solution:



Number of sp^3 hybrid carbon atoms = 8

Question44

What is IUPAC name of following compound?



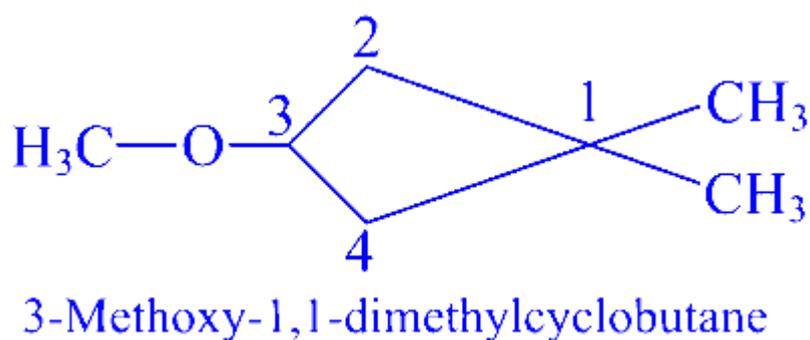
MHT CET 2023 14th May Evening Shift

Options:

- A. 1-Methoxy-3,3-dimethylcyclobutane
- B. 3-Methoxy-1,1-dimethylcyclobutane
- C. 3,3-Dimethylcyclobutoxymethane
- D. 1-Methoxy-3-isopropylbutane

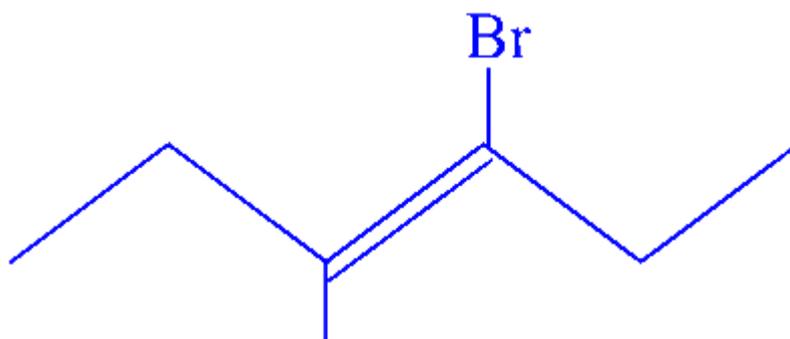
Answer: B

Solution:



Question45

What is IUPAC name of the following compound?



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Options:

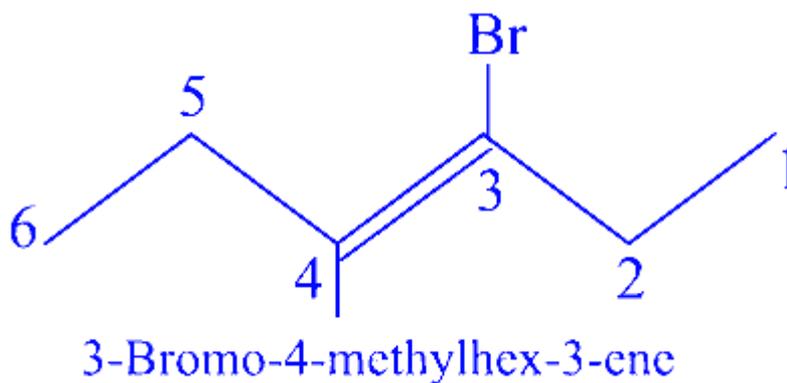
- A. 3-Bromo-4-ethylbut-3-ene



- B. 3-Bromo-4-methylhex-3-ene
C. 4-Bromo-3-methylhex-3-ene
D. 4-Bromo-4-ethyl-3-methylbut-3-ene

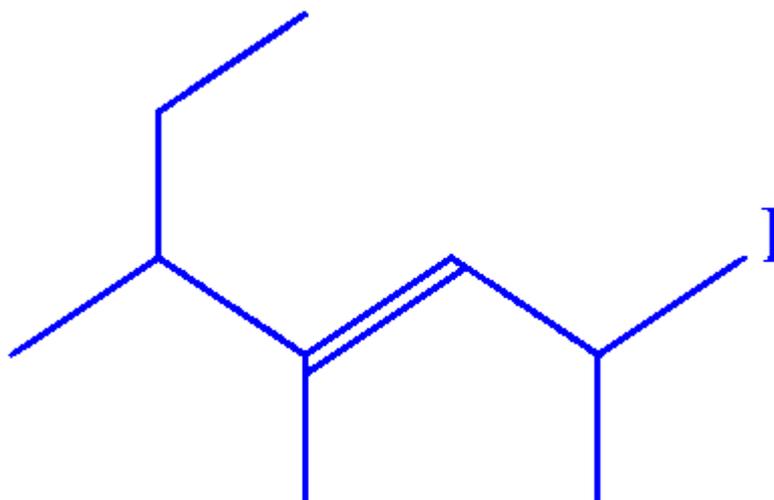
Answer: B

Solution:



Question46

What is IUPAC name of following compound?



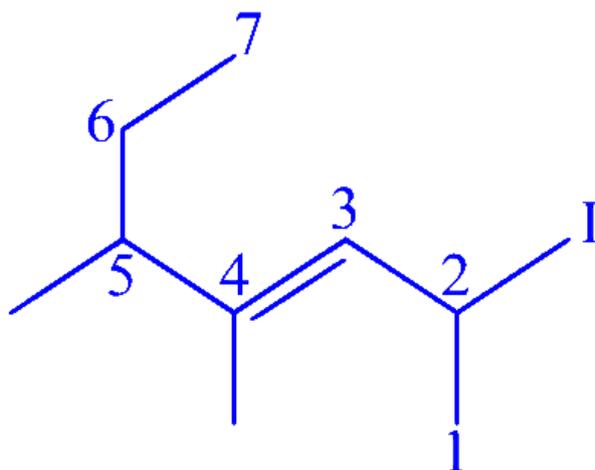
MHT CET 2023 13th May Evening Shift

Options:

- A. 1-iodo-1,3,4-trimethylhex-2-ene
- B. 2-iodo-4,5-dimethylhept-3-ene
- C. 2-iodo-5-ethyl-4-methylhex-3-ene
- D. 1-iodo-4-ethyl-1,3-dimethylpent-2-ene

Answer: B

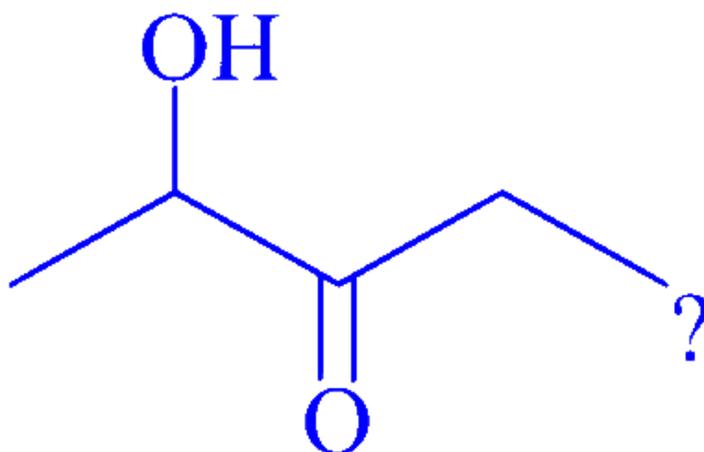
Solution:



The IUPAC name of the given compound is 2-iodo-4,5-dimethyl hept-3-ene.

Question47

Which from following statements is true for the molecule



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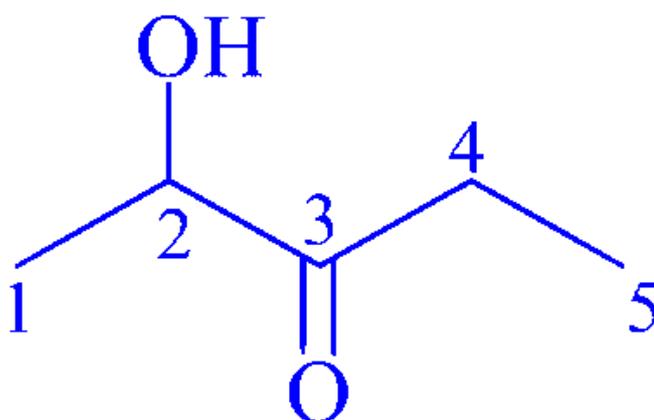
Options:

- A. -OH is considered as principal functional group.
- B. Molecular formula of this compound is $\text{C}_4\text{H}_9\text{O}_2$.
- C. -OH is attached with sp^2 hybrid carbon.
- D. IUPAC name of this compound is 2-hydroxypentane-3-one.

Answer: D

Solution:

The correct statement for given compound



is that its IUPAC name, is 2-hydroxy pentan-3-one.

The correct form of remaining incorrect statements are as follows :

Carbonyl group is consider as principal functional group.

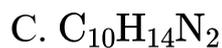
Molecular formula of this compound is $\text{C}_5\text{H}_9\text{O}_2$. -OH is attached with sp^3 hybrid carbon.

Question48

What is the molecular formula of *p*-toluidine?

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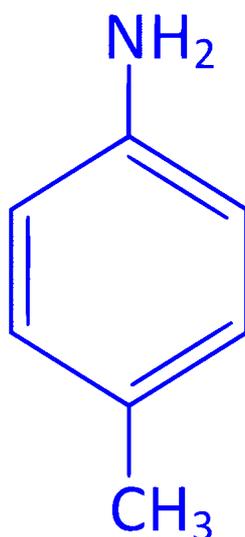
Options:



Answer: B

Solution:

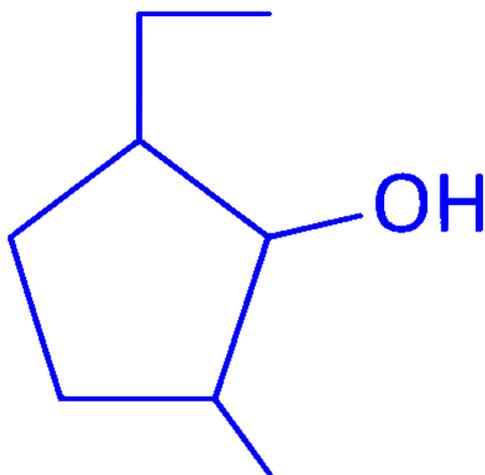
The structure of p-toluidine is



Thus, its molecular formula is C_7H_9N .

Question49

What is IUPAC name of following compound?



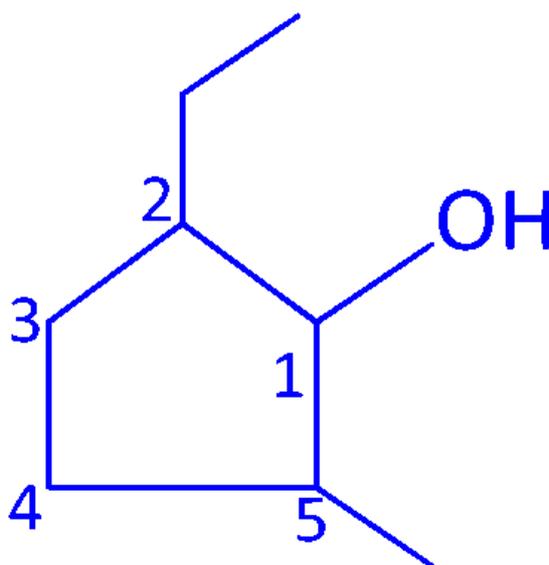
MHT CET 2023 13th May Evening Shift

Options:

- A. 2-ethyl-3-methylcyclopentanol
- B. 2-methyl-3-ethylcyclopentanol
- C. 1-methyl-3-ethylcyclopentanol-2-ol
- D. 2-ethyl-5-methylcyclopentanol

Answer: D

Solution:



The IUPAC name of the given compound is 2-ethyl-5-methylcyclopentanol.

Question 50

What is IUPAC name of crotonyl alcohol?

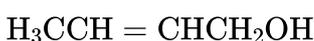
MHT CET 2023 13th May Morning Shift

Options:

- A. But-3-en-1-ol
- B. But-2-en-1-ol
- C. But-1-en-2-ol
- D. But-1-en-3-ol

Answer: B

Solution:



Common name: Crotonyl alcohol

IUPAC name: But-2-en-1-ol

Question 51

What is the common name of benzene-1,3-diol?

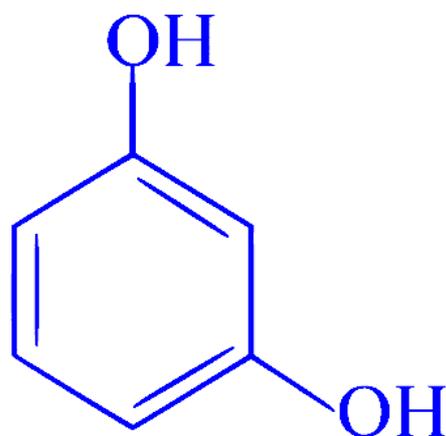
MHT CET 2023 13th May Morning Shift

Options:

- A. Catechol
- B. Resorcinol
- C. Quinol
- D. Pyrogallol

Answer: B

Solution:



Resorcinol
(Benzene-1,3-diol)

Question52

Which from following functional groups is at the lowest order to decide principal functional group in polyfunctional compound?

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Options:

A. $-\text{COOR}$

B. $-\text{COCl}$

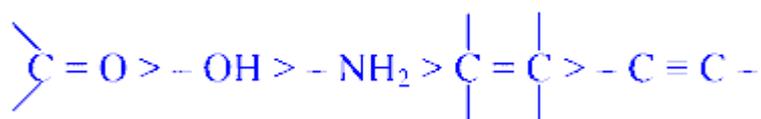
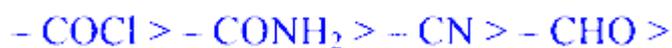
C. $> \text{C} = \text{O}$

D. $-\text{CONH}_2$

Answer: C

Solution:

The principal functional group is decided on the basis of the following order of priority:



Question53

Which of the following is **CORRECT** IUPAC name of catechol?

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Options:

A. Benzene-1,2-diol

B. Benzene-1,3-diol

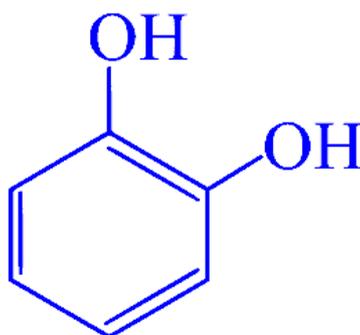
C. Benzene-1,4-diol



D. Benzene-1,3,5 triol

Answer: A

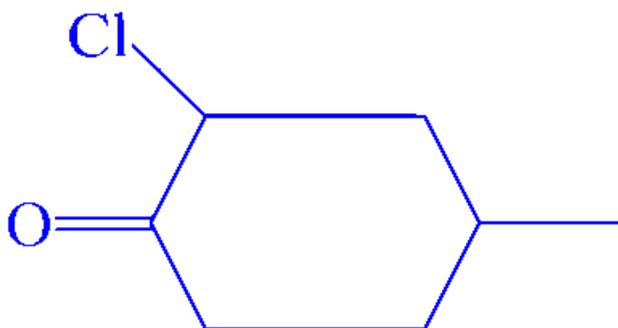
Solution:



Catechol
(Benzene -1,2-diol)

Question54

What is IUPAC name of following compound?



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Options:

A. 1-Chloro-4-methylcyclohexan-2-one

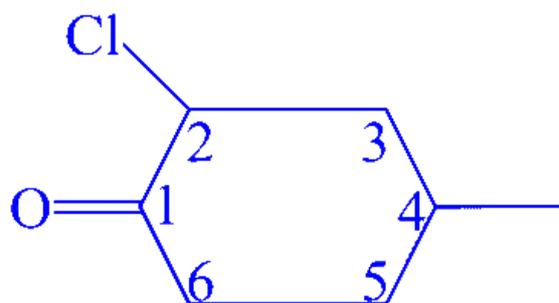
B. 2-Chloro-3-methylcyclohexanone

C. 2-Chloro-4-methylcyclohexanone

D. 4-Methyl-2-chlorocyclohexanone

Answer: C

Solution:



2-chloro-4-methylcyclohexanone

Question55

What is the number of moles of sp^3 hybrid carbon atoms in one mole of 2-Methylbut-2-ene?

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Options:

A. Four

B. Three

C. Two

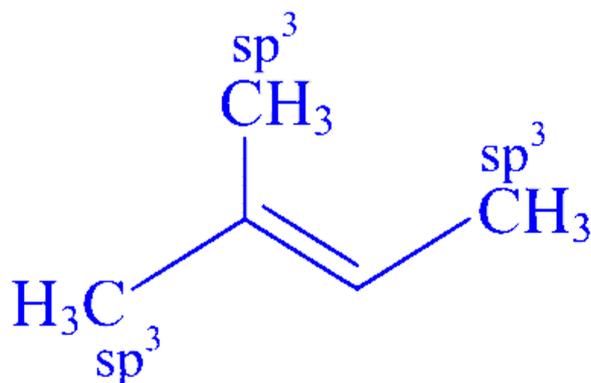
D. One

Answer: B



Solution:

Structure of 2-Methylbut-2-ene:

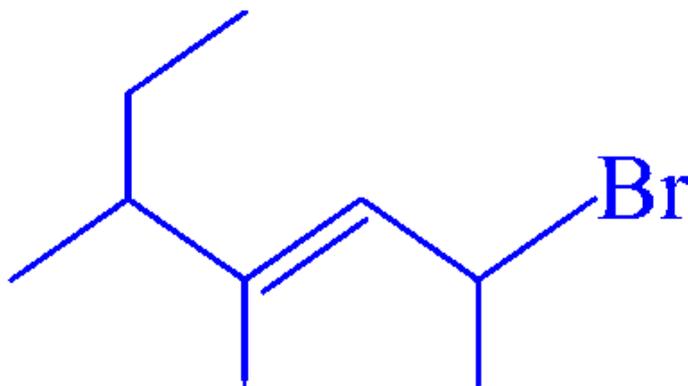


In 2-methylbut-2-ene, three carbon atoms are sp^3 hybridized.

Therefore, in one mole of 2-methylbut-2-ene, there are three moles of sp^3 hybrid carbon atoms.

Question56

The IUPAC name of following compound is:



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Options:

A. 1-Bromo-1,3,4-trimethylhex-2-ene

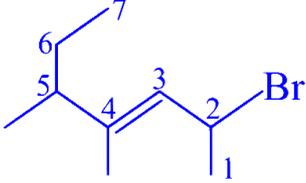
B. 2-Bromo-4,5-dimethylhept-3-ene

C. 2-Bromo-5-ethyl-4-methylhex-3-ene

D. 1-Bromo-4-ethyl-1,3-dimethylpent-2-ene

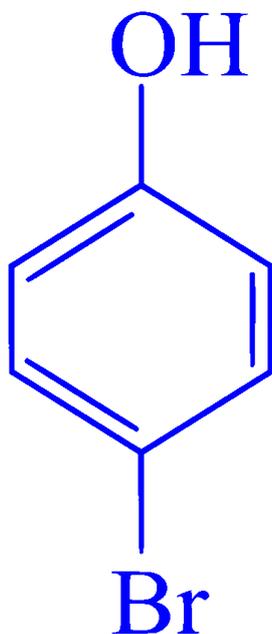
Answer: B

Solution:

Compound	IUPAC name
	2-Bromo-4,5-dimethylhept-3-ene

Question57

What is IUPAC name of the compound?



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Options:

- A. 1-Bromo-4-hydroxybenzene
- B. 1-Hydroxy-4-bromobenzene
- C. 4-Hydroxybromobenzene
- D. 4-Bromophenol

Answer: D

Solution:

The compound shown is a **benzene ring with –OH and –Br groups in the para (1,4) positions** .

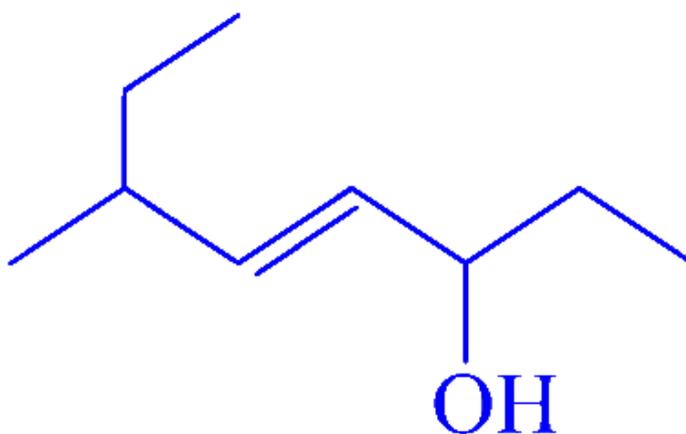
- The **–OH group** has priority and gives the parent name **phenol** .
- The **bromo substituent** is at the **4-position** relative to –OH.

IUPAC name: 4-Bromophenol

Correct answer: D

Question58

What is IUPAC name of following compound?



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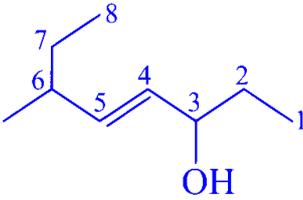
Options:



- A. 2-Ethylhept-3-en-5-ol
- B. 3-Methyloct-4-en-6-ol
- C. 6-Methyloct-4-en-3-ol
- D. 6-Ethylhept-4-en-3-ol

Answer: C

Solution:

Compound	IUPAC name
	6-Methyloct-4-en-3-ol

Question59

Which among the following phenols does **NOT** correctly match with their IUPAC names?

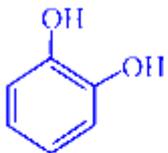
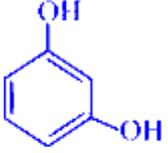
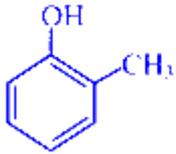
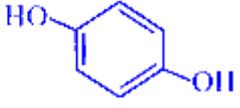
MHT CET 2023 10th May Morning Shift

Options:

- A. Catechol: Benzene-1,2-diol
- B. Resorcinol : Benzene-1,3-diol
- C. o-Cresol : Benzene-1,2,3-triol
- D. Quinol: Benzene-1,4-diol

Answer: C

Solution:

 <p>Catechol (Benzene-1,2-diol)</p>	 <p>Resorcinol (Benzene-1,3-diol)</p>
 <p>o-Cresol (2-Methylphenol)</p>	 <p>Quinol (Benzene-1,4-diol)</p>

Question60

What is IUPAC name of propylene glycerol?

MHT CET 2023 9th May Evening Shift

Options:

- A. Propane-1,2-diol
- B. Propane-1,3-diol
- C. Propane-1,2,3-triol
- D. Propene-1,2,3-triol

Answer: C

Solution:

Common Name	Structural formula	IUPAC Name
Propylene glycerol	$ \begin{array}{c} \text{H}_2\text{C} - \text{CH} - \text{CH}_2 \\ \quad \quad \\ \text{OH} \text{OH} \quad \text{OH} \end{array} $	Propane-1,2,3-triol



Question61

What is the IUPAC name of allylamine?

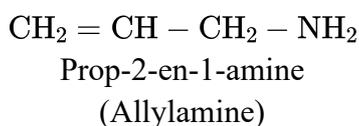
MHT CET 2023 9th May Evening Shift

Options:

- A. Propan-1-amine
- B. Prop-2-en-1-amine
- C. Prop-1-en-2-amine
- D. Propan-2-amine

Answer: B

Solution:



Question62

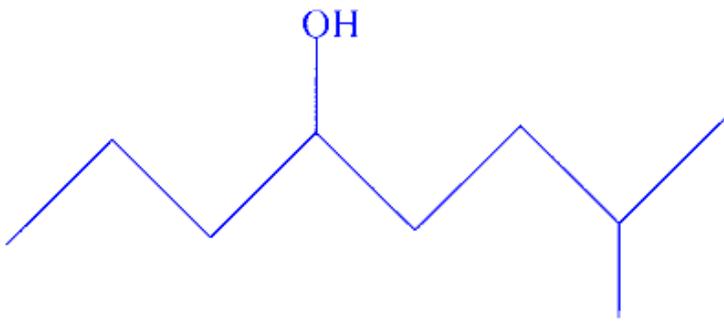
Which from following is a CORRECT bond line formula of $\text{HO}(\text{CH}_2)_3\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$

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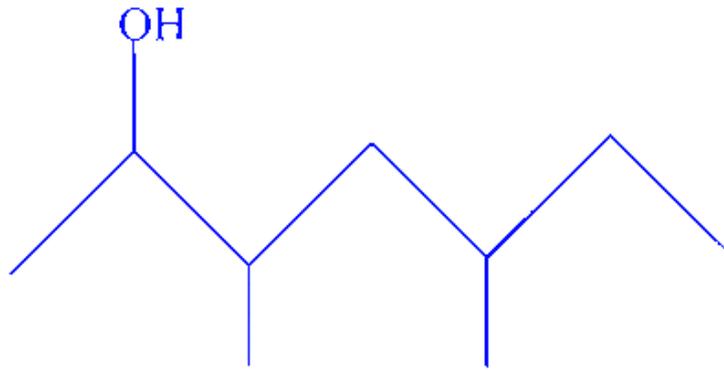
Options:

A.

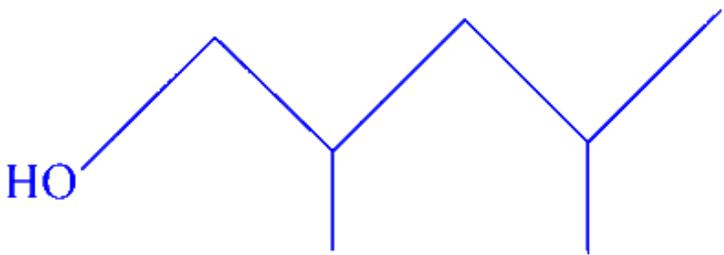




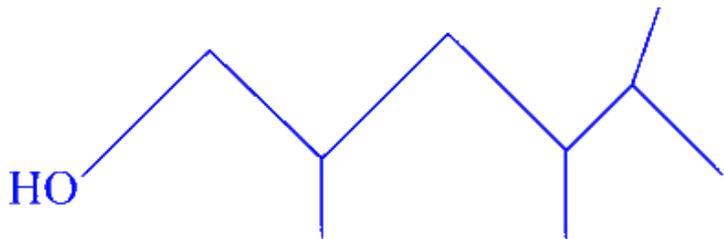
B.



C.

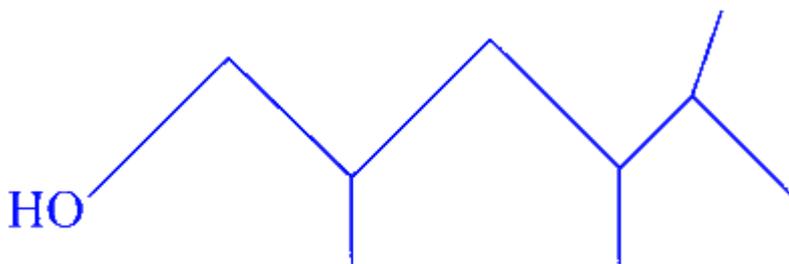


D.



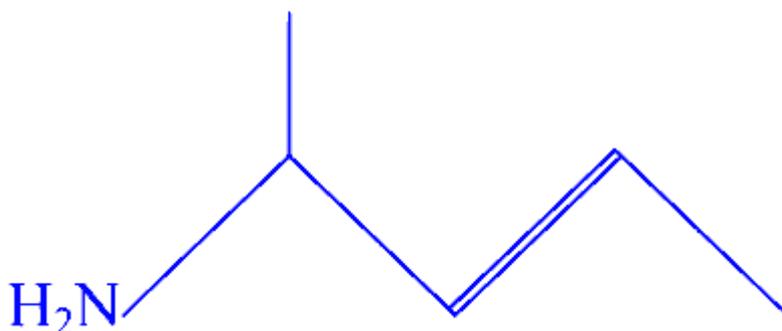
Answer: D

Solution:



Question63

What is the IUPAC name of following compound?



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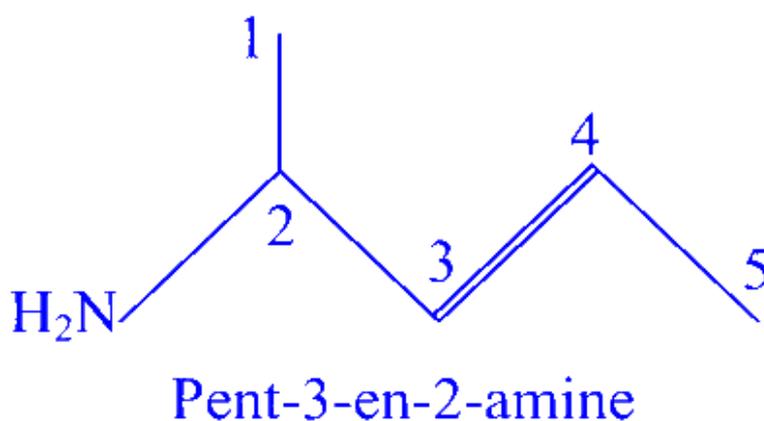
Options:

- A. 1-Methylbut-2-en-1-amine
- B. Pent-3-en-2-amine
- C. Pent-2-en-4-amine
- D. 4-Methylbut-2-en-4-amine

Answer: B

Solution:

In IUPAC nomenclature of organic compounds, $-\text{NH}_2$ group has a higher priority than a carbon-carbon double bond.



Question64

What is IUPAC name of phloroglucinol?

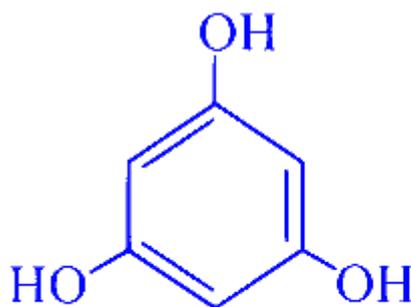
MHT CET 2021 24th September Evening Shift

Options:

- A. Benzene-1, 3-diol
- B. Benzene-1,4-diol
- C. Benzene-1,3,5-triol
- D. Benzene-1,2,3-triol

Answer: C

Solution:

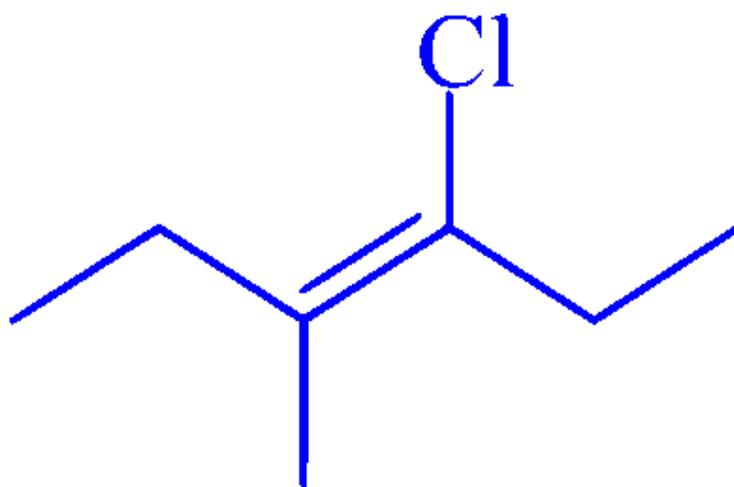


Common name : Phloroglucinol

IUPAC name : Benzene-1,3,5-triol

Question65

What is IUPAC name of the following compound?



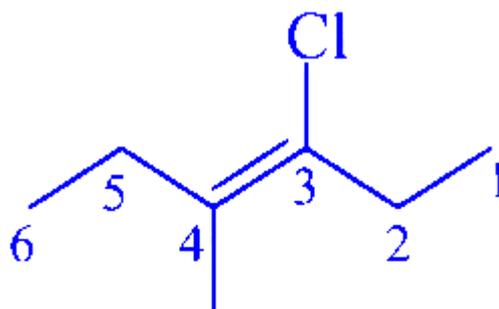
MHT CET 2021 24th September Evening Shift

Options:

- A. 4-Chloro-4-ethyl-3-methylbut-3-ene
- B. 4-Chloro-3-methylhex-3-ene
- C. 3-Chloro-4-ethylbut-3-ene
- D. 3-Chloro-4-methylhex-3-ene

Answer: D

Solution:



3-Chloro-4-methylhex-3-ene

Question66



Which among the following is a formula of mustard gas?

MHT CET 2021 24th September Morning Shift

Options:

A. SOCl_2

B. COCl_2

C. $\text{S}(\text{CH}_2\text{CH}_2\text{Cl})_2$

D. CCl_3NO_2

Answer: C

Solution:

The classic “mustard gas” is bis(2-chloroethyl) sulfide, whose structural formula is $\text{S}(\text{CH}_2\text{CH}_2\text{Cl})_2$.

That corresponds to Option C.

Question67

IUPAC name of the compound $(\text{CH}_3)_4\text{C}$ is

MHT CET 2021 23rd September Evening Shift

Options:

A. 2-Methylbutane

B. Neopentane

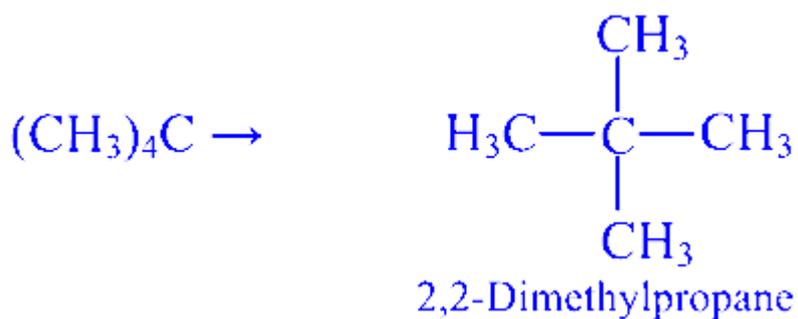
C. 2,2-Dimethylpropane

D. 2-Methylpentane



Answer: C

Solution:



Question68

What is IUPAC name of catechol?

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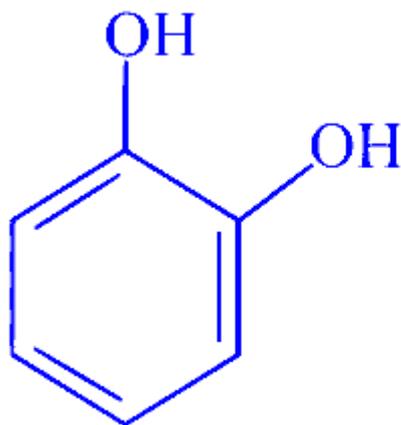
Options:

- A. Benzene-1,3,5-triol
- B. Benzene-1,2-diol
- C. Benzene-1,3-diol
- D. Benzene-1,4-diol

Answer: B

Solution:



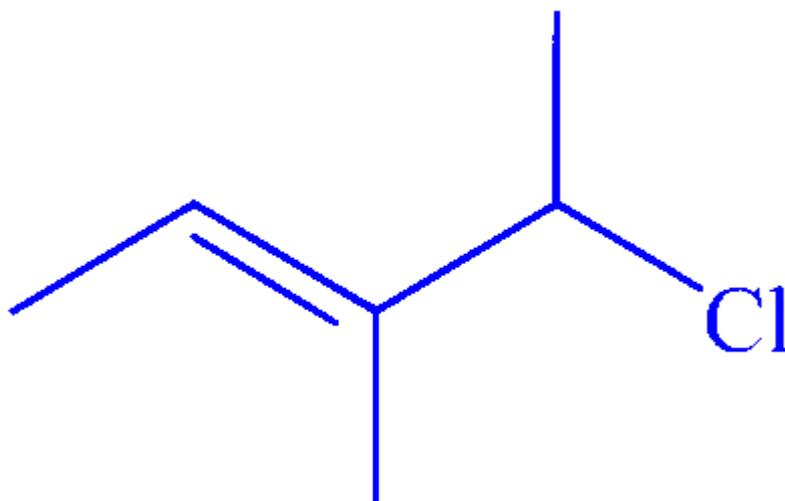


Common name : Catechol

IUPAC name : Benzene-1,2-diol

Question69

The IUPAC name of following compound is



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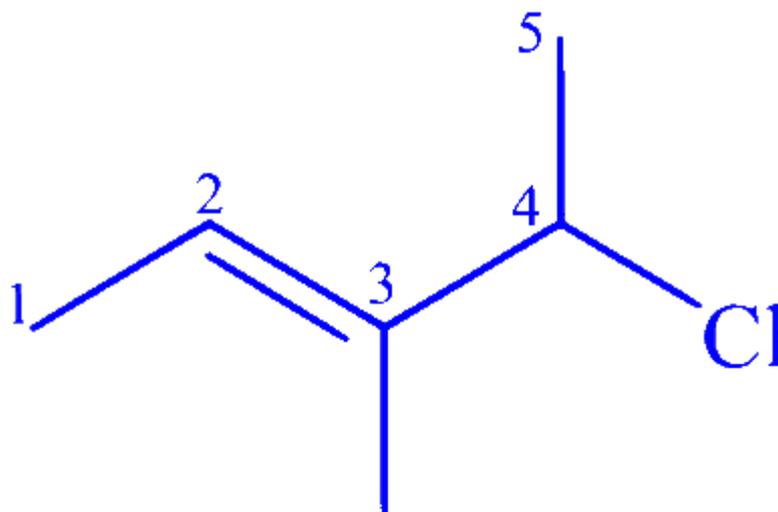
Options:

- A. 2-Chloro-3-methylpent-3-ene
- B. 4-Chloro-3-methylpent-2-ene
- C. 1-Chloro-1,2-dimethylbut-2-ene
- D. 4-Chloro-3,4-dimethylbut-2-ene



Answer: B

Solution:



4-Chloro-3-methylpent-2-ene

Question 70

What is the IUPAC name of glyoxal?

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Options:

- A. Propanedial
- B. Ethanedial
- C. 2-Methyl propanal
- D. Prop-2-enal

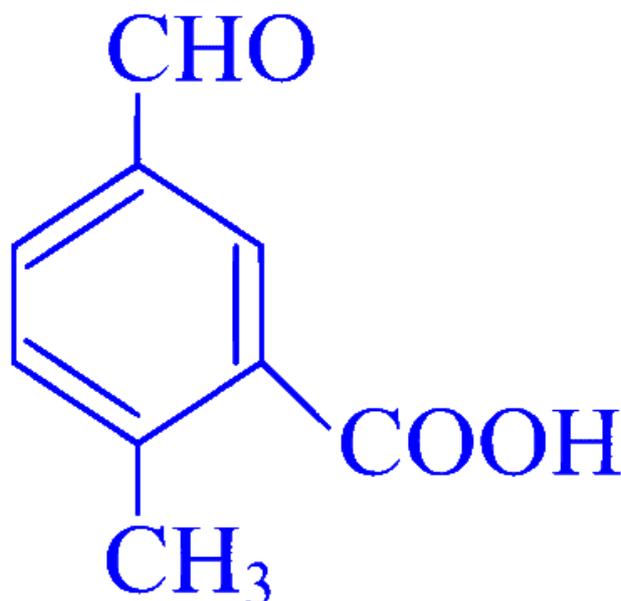
Answer: B

Solution:



Question71

What is IUPAC name of following compound?



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Options:

- A. 3-Carboxy-4-methyl benzaldehyde
- B. 5-Carboxy-4-methyl benzaldehyde
- C. 3-Formyl-6-methyl benzoic acid
- D. 5-Formyl-6-methyl benzoic acid

Answer: C



Solution:

The given compound is a benzene ring with a methyl group, a carboxyl group, and an aldehyde group as substituents. Here is how to determine the correct IUPAC name step by step:

- 1. Identification of Principal Functional Group:** For benzene derivatives, the principal functional group should get the lowest possible number. In this case, the priority order is Carboxylic acid (higher priority) > Aldehyde > Methyl.
- 2. Numbering the Ring:** Number the benzene ring such that the carboxylic acid group (COOH) gets position 1. This will make sure that the substituents get the lowest possible locants.
- 3. Identify the Positions of Substituents:**
 - Carboxyl group (COOH) at position 1.
 - Aldehyde group (CHO) at position 3 (relative to the carboxyl group).
 - Methyl group (CH₃) at position 6.
- 4. Combine Everything:** The IUPAC name is hence derived by naming the substituents in alphabetical order attached to the parent benzoic acid. The complete name is 3-Formyl-6-Methyl Benzoic Acid.

Therefore, the correct option is:

Option C: 3-Formyl-6-methyl benzoic acid

Question72

What is the difference in molar mass of a member of homologous series from it's neighboring members in gram per mole?

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Options:

- A. 14
- B. 18
- C. 30
- D. 25

Answer: A



Solution:

A homologous series is a group of organic compounds that share a common functional group and exhibit a regular pattern in their chemical structure, typically differing by a consistent unit. The most common units by which compounds in a homologous series differ is the methylene group, which has the formula $-CH_2-$.

The molar mass of the methylene group CH_2 can be calculated as follows:

Carbon (C) has an atomic mass of approximately 12 grams per mole, while hydrogen (H) has an atomic mass of approximately 1 gram per mole.

Therefore, the molar mass of the methylene group is:

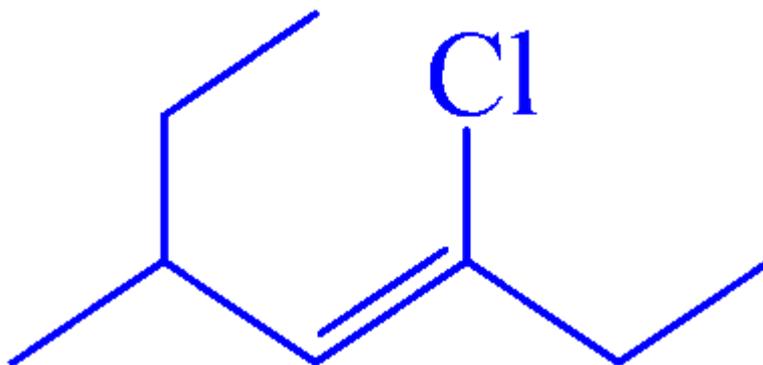
$$M(CH_2) = 12 \text{ grams per mole (for C)} + 2 \times 1 \text{ grams per mole (for 2 H)} = 12 + 2 = 14 \text{ grams per mole}$$

Hence, the difference in molar mass between neighboring members in a homologous series is:

Option A: 14 grams per mole

Question 73

What is IUPAC name of following compound?



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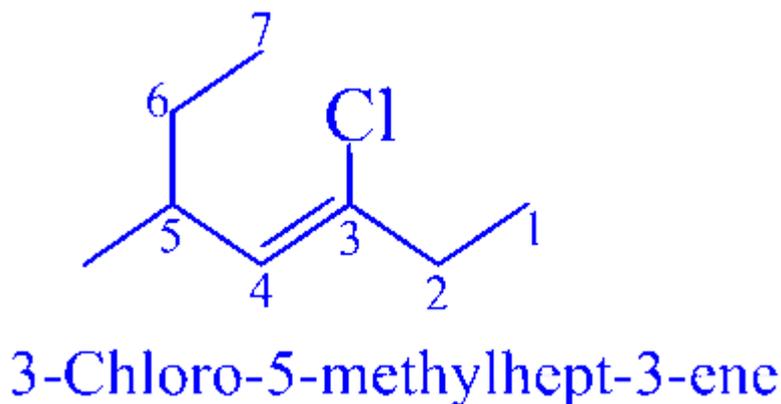
Options:

- A. 5-Chloro-3-methylhept-4-ene
- B. 3-Chloro-5-methylhept-3-ene
- C. 3-Chloro-5-ethylhex-3-ene
- D. 4-Chloro-2-ethylhex-3-ene



Answer: B

Solution:



Question 74

Which among the following statement is **NOT** true about homologous series of organic compounds?

MHT CET 2021 22th September Morning Shift

Options:

- A. Each member of a series differs by two carbon atoms and two H atoms from neighbouring member.
- B. All members have similar chemical properties.
- C. All members of series have same type of carbon skeleton.
- D. All members of series are represented by same general formula.

Answer: A

Solution:

The statement that is **NOT** true about homologous series of organic compounds is:

Option A: Each member of a series differs by two carbon atoms and two H atoms from neighbouring member.



Explanation:

In a homologous series, each successive member differs from the preceding one by a $-\text{CH}_2$ group, which corresponds to one carbon atom and two hydrogen atoms. Therefore, it is not accurate to say that each member in a homologous series differs by two carbon atoms and two hydrogen atoms. The correct distinction is by one carbon atom and two hydrogen atoms (i.e., $-\text{CH}_2$).

Let's evaluate the other options to understand why they are true:

Option B: All members have similar chemical properties.

This is true because members of a homologous series have the same functional group, which determines their chemical reactivity and properties.

Option C: All members of series have the same type of carbon skeleton.

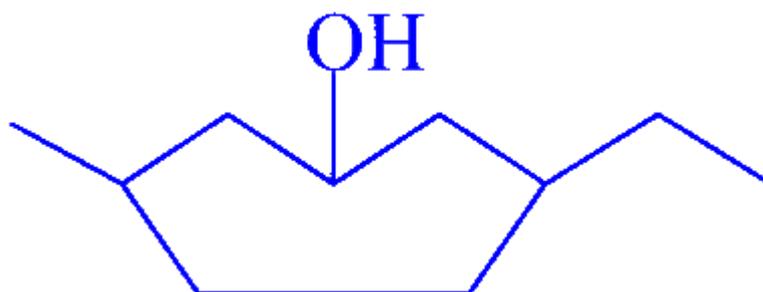
This is true as the carbon skeleton pattern (linear, branched, etc.) generally remains the same across the series, with each addition of $-\text{CH}_2$ unit.

Option D: All members of series are represented by the same general formula.

This is true because a homologous series can be expressed by a general formula. For example, alkanes can be represented by $\text{C}_n\text{H}_{2n+2}$, where n is the number of carbon atoms.

Question 75

What is IUPAC name of the following compound?



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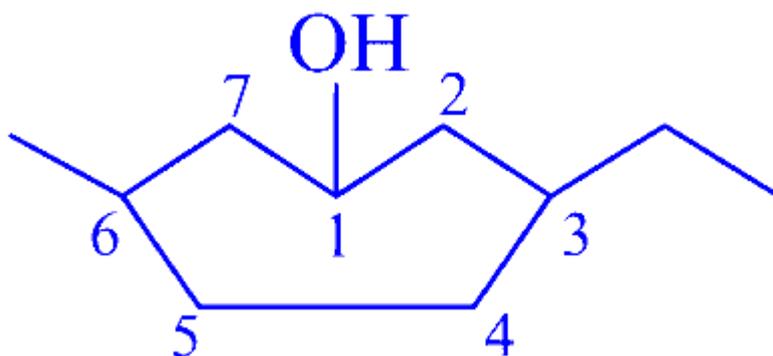
Options:

- A. 3-Methyl-6-ethyl cycloheptanol
- B. 3-Ethyl-6-methyl cycloheptanol
- C. 3-Ethyl cycloheptanol

D. 1-Ethyl-5-methyl cycloheptan-3-ol

Answer: B

Solution:



3-Ethyl-6-methyl cycloheptanol

Question 76

The common name of 1-chloro-2, 2-dimethyl propane is

MHT CET 2020 16th October Evening Shift

Options:

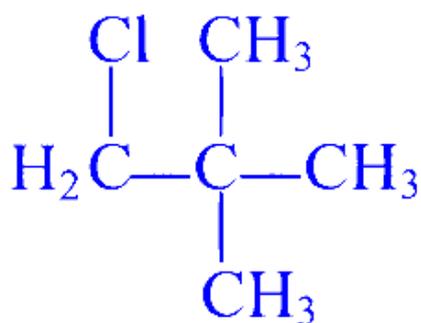
- A. isopentyl chloride
- B. neo-pentyl chloride
- C. *n*-pentyl chloride
- D. isopropyl chloride

Answer: B

Solution:

Neo-pentyl chloride is common name of 1-chloro-2,2-dimethyl propane.





1-chloro-2, 2-dimethyl propane
(neo-pentyl chloride)

Question77

What is IUPAC name of hydroquinone?

MHT CET 2020 16th October Evening Shift

Options:

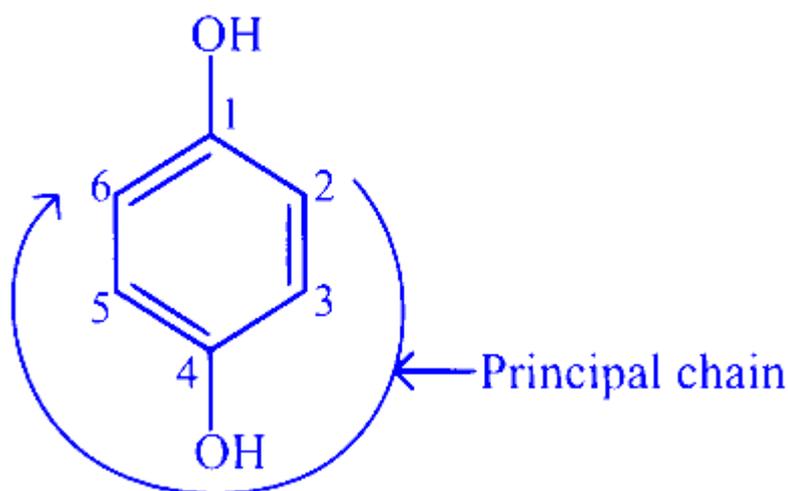
- A. Benzene-1, 3, 5-triol
- B. Benzene-1, 2-diol
- C. Benzene-1, 4-diol
- D. Benzene-1, 2, 4-triol

Answer: C

Solution:

Benzene-1, 4-diol is IUPAC name of hydroquinone.





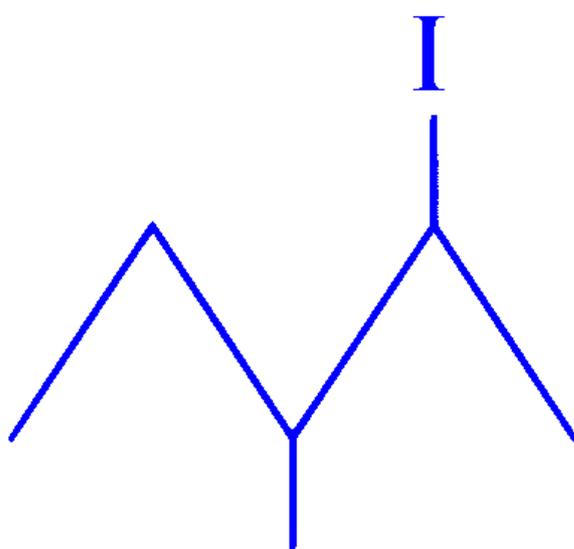
Question78

The bond line formula of 1-iodo -2, 3-dimethyl pentane is

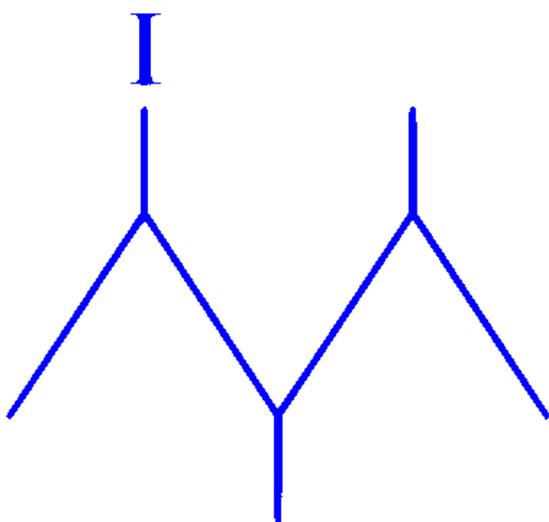
MHT CET 2019 2nd May Morning Shift

Options:

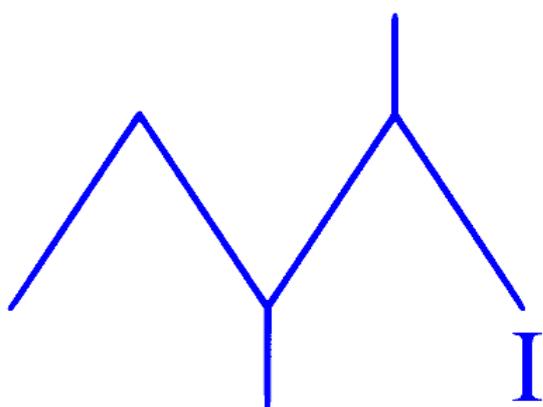
A.



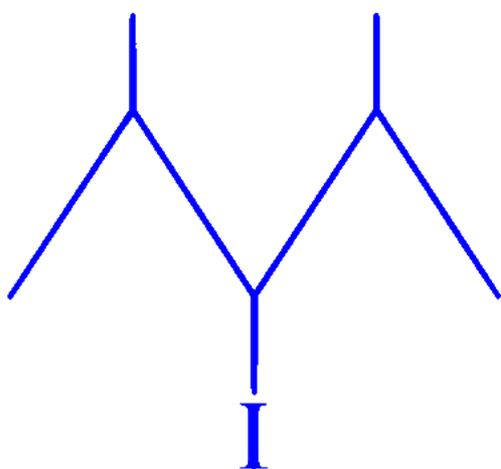
B.



C.



D.



Answer: C



Solution:

The bond line formula of 1-iodo-2, 3-dimethyl pentane. i.e.

