

**Demonstrate understanding of the properties of selected organic compounds**  
**Collated Naming Organic Compounds**

**2020**

Complete the following table

| Compound  | IUPAC (systematic) name |
|---|-------------------------|
|   | Butan-2-amine           |
| $\begin{array}{c} \text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH}_3 \\   \\ \text{OH} \end{array}$              |                         |
| $\begin{array}{c} \text{CH}_3 \\   \\ \text{CH}_3 - \text{C} = \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \end{array}$ |                         |
|   | iodoethane              |

**2019**

Complete the following table

| Compound   | IUPAC (systematic) name |
|--|-------------------------|
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{O} \\   \quad   \quad // \\ \text{H} - \text{C} - \text{C} - \text{C} \\   \quad   \quad \backslash \\ \text{H} \quad \text{H} \quad \text{OH} \end{array}$  |                         |
|  | propan-2-amine          |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\   \quad   \quad   \quad   \quad   \\ \text{H} - \text{C} = \text{C} - \text{C} - \text{C} - \text{C} - \text{Cl} \\ \quad \quad \quad   \quad   \quad   \\ \quad \quad \quad \text{H} \quad \text{H} \quad \text{H} \end{array}$ |                         |
|  | 2,3-dimethylbutane      |

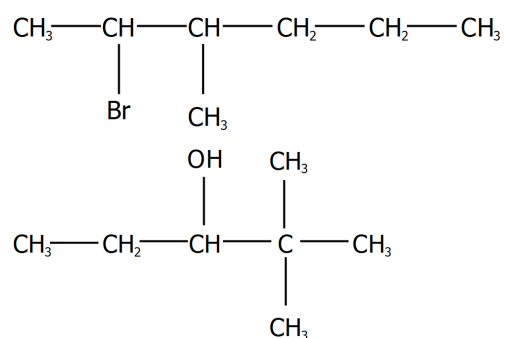
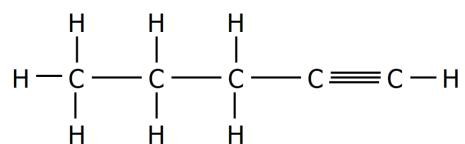
2018

Complete the following table

| Compound  | IUPAC (systematic) name                                    |
|---|--|
| $\text{CH}_2=\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3$   |  |
| $  \begin{array}{ccccccc}  & & \text{CH}_3 & - & \text{CH} & - & \text{CH} & - & \text{CH}_3 \\  & &   & &   & &   & & \\  & & \text{CH}_3 & & & & \text{OH} & &   \end{array}  $ |  |
|   | <p style="text-align: center;">2-hydroxypropanoic acid</p> |

2017

Name the following molecules .



2016

Complete the following table

| Structural formula  | IUPAC (systematic) name |
|---|-------------------------|
| $\begin{array}{ccccccc} \text{CH}_3 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_3 \\ & & & & & & & &   & & \\ & & & & & & & & \text{I} & & \end{array}$ |                         |
|   | 3-methylpentanoic acid  |
|   | but-1-yne               |
| $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{NH}_2$   |                         |

2015

Complete the following table to show the structural formula and IUPAC (systematic) name for each compound.

| Structural formula  | IUPAC (systematic) name |
|---|-------------------------|
|   | Propan-1-amine          |
|   | 2-chlorobutanoic acid   |
| $\text{CH}_3\text{---CH}_2\text{---CH}_2\text{---}\overset{\text{CH}_3}{\underset{ }{\text{CH}}}\text{---}\overset{\text{OH}}{\underset{ }{\text{CH}}}\text{---CH}_3$ |                         |
| $\begin{array}{c} \text{Br} \\   \\ \text{CH}_3\text{---C---CH}_3 \\   \\ \text{CH}_3 \end{array}$  |                         |

The organic compound, 4-chloro-3-methylpent-4-ene has been named incorrectly. Draw the implied structure and explain why it is named incorrectly.

2014

| Structural formula   | IUPAC (systematic) name |
|--|-------------------------|
|  | But-1-yne               |
|  | 2,2-dichloropentan-1-ol |
| $\text{CH}_3\text{---CH}_2\text{---CH}_2\text{---CH}_2\text{---CH}_2\text{---NH}_2$  |                         |
| $\begin{array}{ccccccc} & & & & & & \text{OH} \\ & & & & & & / \\ \text{CH}_3\text{---} & \text{CH}_2\text{---} & \text{CH}_2\text{---} & \text{CH} & \text{---} & \text{CH}_2\text{---} & \text{C} \\ & & &   & & & // \\ & & & \text{CH}_3 & & & \text{O} \end{array}$ |                         |
| $\begin{array}{ccccccc} \text{CH}_3\text{---} & \text{CH} & \text{---} & \text{CH} & & & \\ &   & & // & & & \\ & \text{Cl} & & \text{C} & \text{---} & \text{CH}_2\text{---} & \text{CH}_3 \\ & & &   & & & \\ & & & \text{Cl} & & & \end{array}$                       |                         |

2013

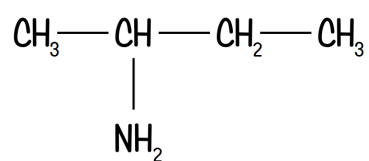
| Structural formula  | IUPAC (systematic) name |
|---|-------------------------|
|   | Pentanoic acid          |
|   | 3-methylbut-1-ene       |
| $\text{CH}_3\text{---CH}_2\text{---CH}_2\text{---NH}_2$   |                         |
| $\begin{array}{c} \text{CH}_3\text{---CH---CH}_2\text{---OH} \\   \\ \text{Cl} \end{array}$   |                         |
| $\begin{array}{c} \text{CH}_2\text{---CH---CH}_2\text{---CH}_2\text{---CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ |                         |

2012

| Structural formula   | IUPAC (systematic) name |
|--|-------------------------|
| $  \begin{array}{c}  \text{Cl} \\    \\  \text{CH}_3 - \text{C} - \text{CH}_3 \\    \\  \text{Cl}  \end{array}  $  |                         |
|  | Ethanoic acid           |
| $  \begin{array}{ccccccc}  \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH} & - & \text{C} \\    & & & & & &   & & // \\  \text{Br} & & & & & & \text{CH}_3 & & \text{O} \\  & & & & & & & & \backslash \\  & & & & & & & & \text{OH}  \end{array}  $ |                         |
| $  \begin{array}{ccc}  \text{H} & & \text{H} \\  \backslash & &   \\  \text{N} & - & \text{C} & - & \text{H} \\  / & &   \\  \text{H} & & \text{H}  \end{array}  $   |                         |
|  | 2-aminopentane          |

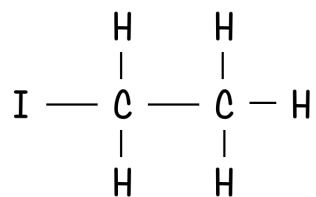
## Answers

2020



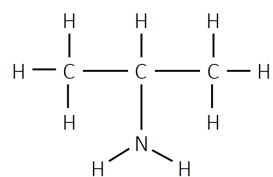
Pentan-2-ol

2-methylhex-2-ene

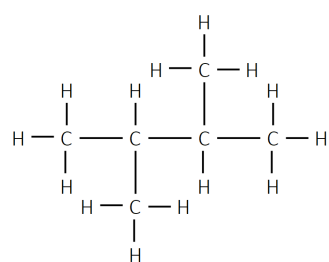


2019

Propanoic acid



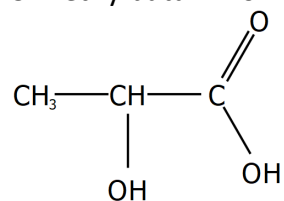
5-chloropent-1-ene



2018

Pent-1-ene

3-methylbutan-2-ol





2017

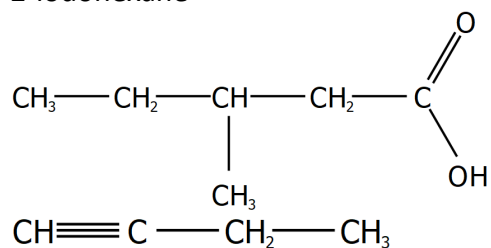
Pent-1-yne

2-bromo-3-methylhexane

2,2-dimethylpentan-3-ol.

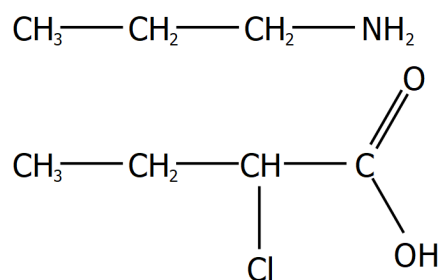
2016

2-iodohexane



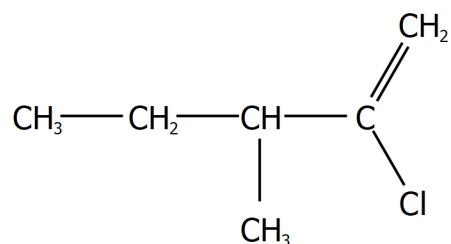
Propan-1-amine / 1-propanamine / 1-aminopropane

2015



3-methylhexan-2-ol

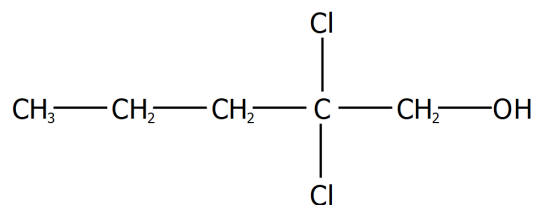
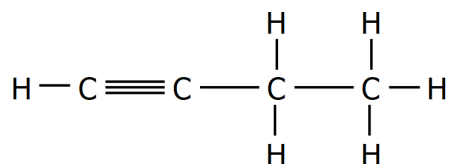
2-bromo-2-methylpropane or 2-bromomethylpropane



Numbering of the chain starts from the end that carries the main functional group, the double bond. Once counted from this end, the number of the double bond and chlorine change.

2-chloro-3-methylpent-1-ene.

2014

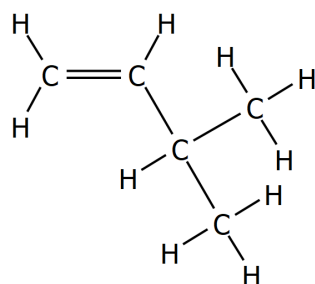
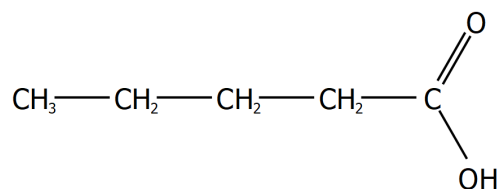


Pentanamine or pentylamine or 1-aminopentane

3-methylhexanoic acid

2,4-dichlorohex-3-ene

2013



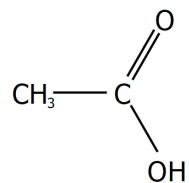
1-propanamine / 1-aminopropane (propyl amine)

2-chloropropan-1-ol

3-methylhexane

2012

2,2-dichloropropane



5-bromo-2-methylpentanoic acid

methanamine or aminomethane

