ONTARIO CHEMISTRY, GRADE 12, UNIVERSITY PREPARATION (SCH4U) · UNIT A · 25 QUESTIONS

# Organic Chemistry — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **An alkane contains only**

- **A** Carbon and oxygen double bonds
- **B** Carbon and hydrogen with single bonds
- **C** Carbon and halogen bonds
- **D** Nitrogen and hydrogen

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**2** **The general formula for an alkane is**

- **A** $C_nH_{2n} + 2$
- **B** $C_nH_{2n}$
- **C** $C_nH_{2n} - 2$
- **D** CnHn

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3 **The IUPAC name for the compound with formula $CH_3CH_2CH_2CH_3$ is**

A Pentane

B Ethane

C Butane

D Propane

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4 **A methyl group attached to the second carbon of propane gives the compound named**

A 2 methylpropane

B 2 methylbutane

C Pentane

D Butane

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5 **Alkenes are characterized by the presence of a**

A Carboxyl group

B Triple bond

C Carbon carbon double bond

D Hydroxyl group

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6 **An alcohol functional group is**

A Carboxyl

B Carbonyl

C Amino

D Hydroxyl

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7 **The functional group of a carboxylic acid is**

A Carbonyl only

B Ester linkage

C Carboxyl

D Hydroxyl only

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8 **An ester is formed by the reaction of a carboxylic acid with an**

A Alkane

B Alkene

C Alcohol

D Amine

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9 **Which compound is an aldehyde**

A Ethanal

B Ethanoic acid

C Ethanol

D Ethyl ethanoate

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10 **A ketone has its carbonyl group**

A Attached to a halogen

B At the end of the chain

C Replaced by nitrogen

D Within the carbon chain

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**11** **Benzene is best described as an aromatic compound with**

- **A** A straight chain of six carbons
- **B** A ring of six carbons with delocalized electrons
- **C** Six separate double bonds
- **D** Only single bonds

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**12** **A student adds a brown solution to an alkene and the brown colour disappears. The brown solution was**

- **A** bromine water
- **B** limewater
- **C** acidified dichromate
- **D** sodium hydroxide solution

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13 **Complete combustion of an organic compound in excess oxygen produces carbon dioxide and**

A Water

B Carbon monoxide

C Methane

D Hydrogen gas

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14 **Which reaction type converts an alkene to an alkane**

A Substitution

B Esterification

C Addition of hydrogen

D Elimination

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15 **Elimination of water from an alcohol produces an**

A Alkane

B Ester

C Carboxylic acid

D Alkene

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16 **A primary alcohol can be oxidized first to an aldehyde and then to a**

A Ester

B Alkene

C Carboxylic acid

D Ketone

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17 **Which statement about isomers is correct**

A Isomers have different numbers of atoms

B Isomers are always identical

C Isomers have different molecular formulas

D Isomers have the same molecular formula but different structures

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18 **Cis and trans isomers differ in the**

A Molecular formula

B Number of hydrogen atoms

C Number of carbon atoms

D Spatial arrangement around a double bond

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19 **The compound 2 butene can show cis trans isomerism because rotation about its double bond is**

A Restricted

B Only at high temperature

C Impossible in alkanes

D Free

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20 **Which polymer is formed by addition polymerization of ethene**

A Polyester

B Polyethene

C Protein

D Nylon

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21 **Condensation polymerization differs from addition polymerization because a small molecule is**

A Added

B Reduced

C Oxidized

D Eliminated

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22 **Nylon is an example of a polymer formed by**

A Combustion

B Fermentation

C Condensation polymerization

D Addition only

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**23** **A benzene ring with a methyl substituent is commonly named**

- A Aniline
- B Phenol
- C Styrene
- D Toluene

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**24** **Which compound is a carboxylic acid**

- A Methanoic acid
- B Methanol
- C Methane
- D Methanal

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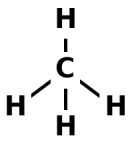
25 **The diagram shows a Lewis structure with a central carbon bonded to four hydrogen atoms. The molecular geometry is**




A Linear

B Bent

C Trigonal planar

D Tetrahedral

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **10.** | D | **19.** | A |
| **2.** | A | **11.** | B | **20.** | B |
| **3.** | C | **12.** | A | **21.** | D |
| **4.** | A | **13.** | A | **22.** | C |
| **5.** | C | **14.** | C | **23.** | D |
| **6.** | D | **15.** | D | **24.** | A |
| **7.** | C | **16.** | C | **25.** | D |
| **8.** | C | **17.** | D | | |
| **9.** | A | **18.** | D | | |

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