ALBERTA CHEMISTRY 30 · UNIT C · 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 **But-1-ene can be classified as**

- A an aliphatic alkane
- B an aromatic alkene
- C an aliphatic alkene
- D a saturated hydrocarbon

Understand It with Pulse | Flag a mistake

2 **A hydrocarbon has a five-carbon parent chain with methyl groups on carbons 2 and 4. Its IUPAC name is**

- A 2,4-dimethylpentane
- B 2,4-dimethylhexane
- C 3,4-dimethylpentane
- D 2,4-dimethylbutane

Understand It with Pulse | Flag a mistake

3 **The graph shows the boiling points of straight chain alkanes against the number of carbon atoms in the molecule. The boiling point of pentane, which has five carbon atoms, is**

- A -42°C
- B 0°C
- C 36°C
- D 69°C

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4 **When one molecule of butane undergoes complete combustion, the number of carbon dioxide molecules produced is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The number of hydrogen atoms in one molecule of 3-ethylhexane is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Aqueous bromine is added to separate samples of cyclohexane and cyclohexene. The sample that causes the bromine solution to lose its colour rapidly, in the absence of light, is**

A cyclohexane

B cyclohexene

C both samples

D neither sample

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7 **The graph shows the boiling points of the isomers of C_5H_{12} against the number of branches in the molecule. 2,2-dimethylpropane has two branches. Its boiling point is**

A 36°C

B 28°C

C 10°C

D 0°C

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8 **When but-1-ene reacts with water in the presence of an acid catalyst, the major product of the addition reaction is**

A butan-1-ol

B butan-2-ol

C butane

D butanoic acid

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9 **The ester ethyl methanoate can be formed by the reaction of**

A ethanol and methanoic acid

B methanol and ethanoic acid

C ethanol and ethanoic acid

D methanol and methanoic acid

Understand It with Pulse | Flag a mistake

10 **The number of carbon atoms in one molecule of 2,2,4-trimethylpentane is**

ANSWER

Understand It with Pulse | Flag a mistake

11 **Which of the following compounds is a structural isomer of hexane?**

A 2-methylbutane

B cyclohexane

C 2,2-dimethylbutane

D hex-2-ene

Understand It with Pulse | Flag a mistake

12 **The monomer used to produce the polymer polypropene is**

- A propane
- B propan-2-ol
- C propanoic acid
- D propene

Understand It with Pulse | Flag a mistake

13 **The compound with the condensed structural formula CH_3-C(=O)-O-CH_2CH_3 is classified as**

- A an alcohol
- B a carboxylic acid
- C an ester
- D an alkane

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14 **The graph shows the boiling points of straight chain alkenes against the number of carbon atoms in the molecule. The boiling point of but-1-ene, which has four carbon atoms, is**

A -104°C

B -48°C

C -6°C

D 30°C

Understand It with Pulse | Flag a mistake

15 **The number of structural isomers that have the molecular formula C_5H_{12} is**

ANSWER

Understand It with Pulse | Flag a mistake

16 **When methane reacts with chlorine gas in the presence of ultraviolet light, the reaction is classified as**

A addition

B substitution

C elimination

D esterification

Understand It with Pulse | Flag a mistake

17 **Ethanol is heated with concentrated sulfuric acid to produce ethene and water. This reaction is classified as**

A addition

B substitution

C combustion

D elimination

Understand It with Pulse | Flag a mistake

18 **Benzene can be classified as an i compound, and its reaction with bromine is ii than the reaction of an alkene with bromine.**

- **A** i: aliphatic ii: faster
- **B** i: aromatic ii: slower
- **C** i: aromatic ii: faster
- **D** i: aliphatic ii: slower

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19 **An acyclic hydrocarbon with the molecular formula C_7H_{12} is an alkene and contains no triple bonds. The number of carbon-carbon double bonds in this hydrocarbon is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **The graph shows the number of structural isomers of alkanes against the number of carbon atoms in the molecule. The number of structural isomers of an alkane with six carbon atoms is**

- **A** 2
- **B** 3
- **C** 5
- **D** 9

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21 **The molecular formula for 3-ethyl-2-methylhexane is**

- **A** C_9H_{18}
- **B** C_8H_{18}
- **C** C_9H_{20}
- **D** C_9H_{22}

Understand It with Pulse | Flag a mistake

22 **Methyl butanoate is an ester that has an apricot-like odour. It can be produced by the reaction of**

A butanoic acid and methanol

B methanoic acid and butan-1-ol

C butanoic acid and ethanol

D methanoic acid and ethanol

Understand It with Pulse | Flag a mistake

23 **The number of carbon atoms in one molecule of ethyl propanoate is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **The graph shows the boiling points of carboxylic acids against the number of carbon atoms in the molecule. The boiling point of ethanoic acid, which has two carbon atoms, is**

- **A** 101°C
- **B** 118°C
- **C** 141°C
- **D** 78°C

Understand It with Pulse | Flag a mistake

25 **A hydrocarbon contains four carbon atoms. It is branched and saturated. The hydrocarbon could be**

- **A** but-2-ene
- **B** cyclobutane
- **C** 2-methylpropene
- **D** methylpropane

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ANSWER KEY

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

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