IGCSE ORGANIC CHEMISTRY PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

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How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

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Questions

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1. Which fraction of crude oil is commonly used as domestic gas for cooking?

A. Gasoline — used as domestic heating fuel.

B. Petrol — used for domestic heating.

C. Diesel — used for cooking.

D. Refinery gas — used as domestic fuel or for cooking.

2. How can you test for the presence of an alkene in a hydrocarbon sample?

A. Add bromine water; the orange color remains unchanged if an alkene is present.

B. Add bromine water; the orange color decolorizes if an alkene is present.

C. Add bromine water; the orange color changes to blue if an alkene is present.

D. Add bromine water; the orange-brown bromine decolorizes if an alkene is present.

3. Which fraction in the list is typically used as petrol (gasoline) for cars?

A. Petrol

B. Diesel

C. Lubricating oil

D. Refinery gases

4. What is the molecular formula of ethane?

A. C_2H_6

B. CH_3-CH_3

C. C_3H_8

D. CH_4

5. Which of the following best describes the properties of polythene?

A. Tough and durable

B. Brittle and weak

C. Soft and volatile

D. Transparent and brittle

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6. Which of the following represents complete combustion of a hydrocarbon with sufficient oxygen?

A. CO_2 and H_2O

B. CO and H_2O

C. C and H_2O

D. CH_4 and O_2

7. How is ethene collected in the dehydration of ethanol?

A. By displacement of water

B. By distillation

C. By filtration

D. By precipitation

8. What does volatile mean?

A. Turns into gas easily/evaporates easily

B. Condenses easily

C. Has a high boiling point

D. Is non-flammable

9. Which of the following is the displayed formula for methane?

A. CH_4

B. C_2H_6

C. C_3H_8

D. C_4H_{10}

10. What is the monomer unit of PVC?

A. Vinyl chloride

B. Ethylene

C. Styrene

D. Propene

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Answers

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1. D
2. D
3. A
4. A
5. A
6. A
7. A
8. A
9. A
10. A

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Explanations

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1. Which fraction of crude oil is commonly used as domestic gas for cooking?

A. Gasoline — used as domestic heating fuel.

B. Petrol — used for domestic heating.

C. Diesel — used for cooking.

D. Refinery gas — used as domestic fuel or for cooking.

Crude oil is separated into fractions with different boiling points, giving light hydrocarbon gases and liquids that are suitable for various uses. Among these, refinery gas is the fraction used as domestic cooking gas. It is mainly propane and butane, stored under pressure as a liquid and released as gas to fuel burners. This makes it convenient for home use, with a controllable flame and safe storage in cylinders. The other options are fuels for engines, not household cooking fuels: gasoline (petrol) and diesel are formulated for engines and have properties that make them unsuitable and unsafe for cooking.

2. How can you test for the presence of an alkene in a hydrocarbon sample?

A. Add bromine water; the orange color remains unchanged if an alkene is present.

B. Add bromine water; the orange color decolorizes if an alkene is present.

C. Add bromine water; the orange color changes to blue if an alkene is present.

D. Add bromine water; the orange-brown bromine decolorizes if an alkene is present.

Bromine water reacts with alkenes by adding Br2 across the carbon–carbon double bond, an electrophilic addition. This breaks the Br2 color, so the orange-brown solution becomes colorless. That decolorization directly signals the presence of a double bond in the sample. If the hydrocarbon is saturated, no addition occurs and the orange-brown color stays. The clearest description of the test result is that the orange-brown bromine decolorizes when an alkene is present.

3. Which fraction in the list is typically used as petrol (gasoline) for cars?

A. Petrol

B. Diesel

C. Lubricating oil

D. Refinery gases

Petrol is the light, volatile fraction obtained from crude oil that is suitable for burning in spark-ignition engines. It vaporizes easily, mixes well with air, and has a suitable octane rating to prevent knocking, which is why it's used as fuel for cars. The other options are heavier or non-fuel fractions: diesel is a heavier fraction used in diesel engines, lubricating oil is too viscous and used for lubrication, and refinery gases are gases at room temperature and typically used as LPG or feedstock rather than as petrol.

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4. What is the molecular formula of ethane?

A. C_2H_6

B. CH_3-CH_3

C. C_3H_8

D. CH_4

Ethane is part of the alkane series, which follow the formula C_nH_{2n+2}. With two carbons (n = 2), the molecule contains two carbon atoms and six hydrogens, giving the molecular formula C_2H_6. The notation CH_3-CH_3 shows how the atoms are bonded in ethane, but it's a structural representation, not the molecular formula. The other options point to a different hydrocarbon (C_3H_8 is propane) or a different molecule entirely (CH_4 is methane), or simply depict the bonding rather than the formula.

5. Which of the following best describes the properties of polythene?

A. Tough and durable

B. Brittle and weak

C. Soft and volatile

D. Transparent and brittle

Polythene is a polymer, so its properties come from its long chains and how those chains interact. The long, tangled polymer chains can deform and absorb energy under stress rather than snapping, which gives the material toughness. That ability to resist breaking and to endure wear makes polythene both tough and durable, which is why it's used for items like bags and bottles. It isn't volatile because large polymer molecules don't evaporate at ordinary temperatures, and under normal conditions polythene isn't brittle. Some polymers can be brittle in cold conditions, but polythene generally remains flexible and strong. While it can be made to be transparent, brittleness is not a defining feature of polythene. So the description that best fits polythene is that it is tough and durable.

6. Which of the following represents complete combustion of a hydrocarbon with sufficient oxygen?

A. CO_2 and H_2O

B. CO and H_2O

C. C and H_2O

D. CH_4 and O_2

When a hydrocarbon burns with plenty of oxygen, it undergoes complete combustion, producing carbon dioxide and water. This happens because the carbon atoms are fully oxidized to CO_2 and the hydrogen atoms are fully oxidized to H_2O, as long as there is more than enough oxygen available. In other words, the products are the most oxidized forms of the elements contained in the fuel. This is why CO_2 and H_2O are the correct products. The other possibilities indicate different outcomes: carbon monoxide and water would arise if oxygen were insufficient, leaving carbon only partially oxidized; elemental carbon and water would imply carbon is left as solid soot, which also signals incomplete combustion; and CH_4 plus O_2 are reactants, not products, so they describe the starting materials rather than the products of combustion.

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7. How is ethene collected in the dehydration of ethanol?

A. By displacement of water

B. By distillation

C. By filtration

D. By precipitation

Gas collection by water displacement is used for gases that don't dissolve in water and don't react with it. Ethene produced when ethanol is dehydrated is a dry gas that isn't soluble in water, so it can be captured by collecting the gas over water. The ethene bubbles out and pushes the water out of an inverted container, giving you the collected gas. The other options aren't about gathering a gas: distillation separates liquids by boiling points, filtration removes solids, and precipitation forms a solid from solution.

8. What does volatile mean?

A. Turns into gas easily/evaporates easily

B. Condenses easily

C. Has a high boiling point

D. Is non-flammable

Volatility describes how readily a liquid becomes a gas. A highly volatile substance has a high vapor pressure at room temperature, so it evaporates quickly—exactly what "turns into gas easily/evaporates easily" means. That makes the first option the best fit. The other ideas don't align with volatility: condensing easily would be the gas turning into a liquid, not the liquid turning into a gas. A high boiling point means the liquid needs more heat to boil, so it's less volatile. And being non-flammable has nothing to do with how easily a substance vaporizes. (In fact, some volatile liquids are flammable.)

9. Which of the following is the displayed formula for methane?

A. CH4

B. C2H6

C. C3H8

D. C4H10

Methane is the simplest alkane, so its formula must reflect one carbon atom bonded to four hydrogens. Carbon forms four bonds, and in methane all four are to hydrogen, giving the molecular formula CH4. The displayed formula should show one carbon center with four hydrogen atoms around it, which matches CH4. The other options correspond to larger alkanes with more carbon atoms: ethane has two carbons and six hydrogens, propane has three carbons and eight hydrogens, and butane has four carbons and ten hydrogens. In general, alkanes follow the formula CnH2n+2, and for methane (n = 1) that gives CH4, which aligns with the correct displayed formula.

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10. What is the monomer unit of PVC?

A. Vinyl chloride

B. Ethylene

C. Styrene

D. Propene

PVC is made by polymerizing vinyl chloride. The monomer that links to form PVC is vinyl chloride, which has the structure CH2=CHCl. When these units join, the double bond opens and the repeating unit in the polymer chain becomes -CH2-CHCl-. This is what the polymer chain is built from, giving polyvinyl chloride. The other options would produce different polymers: ethylene would give polyethylene, styrene would give polystyrene, and propene would give polypropylene.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://igcseorganicchem.examzify.com

We wish you the very best on your exam journey. You've got this!

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