

IGCSE Edexcel Chemistry Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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.

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!

Questions

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- 1. Which condition leads to incomplete combustion?**
 - A. Limited supply of oxygen**
 - B. Excess oxygen**
 - C. High fuel quality**
 - D. Low temperature**
- 2. Which formula represents Ethene?**
 - A. C₂H₄**
 - B. C₂H₆**
 - C. C₃H₆**
 - D. CH₄**
- 3. Which ion is produced by alkalis in solution?**
 - A. H⁺**
 - B. OH⁻**
 - C. Na⁺**
 - D. K⁺**
- 4. What color is universal indicator in a weak alkali?**
 - A. Blue**
 - B. Purple**
 - C. Green**
 - D. Orange**
- 5. Which observation would indicate sulfate ions when BaCl₂ is used?**
 - A. White precipitate forms**
 - B. Blue solution forms**
 - C. No change**
 - D. Color change to pink**
- 6. Which metal is more reactive, magnesium or lithium?**
 - A. Magnesium**
 - B. Lithium**
 - C. Sodium**
 - D. Calcium**

- 7. What is the required condition for the chlorination of methane?**
- A. Ultraviolet light (UV)**
 - B. Heat at high temperature**
 - C. A metal catalyst**
 - D. High pressure**
- 8. In a solution, the substance that is dissolved in another is called the**
- A. Solvent**
 - B. Solute**
 - C. Catalyst**
 - D. Precipitate**
- 9. Which ion has a 1- charge?**
- A. Nitrate ion**
 - B. Sulfate ion**
 - C. Carbonate ion**
 - D. Ammonium ion**
- 10. What does the mole measure?**
- A. Mass**
 - B. Amount of substance**
 - C. Volume**
 - D. Temperature**

Answers

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

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Explanations

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1. Which condition leads to incomplete combustion?

A. Limited supply of oxygen

B. Excess oxygen

C. High fuel quality

D. Low temperature

Incomplete combustion happens when there isn't enough oxygen to fully oxidize the fuel. With limited oxygen, carbon in the fuel can only partially oxidize, forming carbon monoxide or carbon (soot) instead of carbon dioxide, and the flame often looks smoky. Because the oxidizer is scarce, you don't get the full combustion reaction that produces CO_2 and H_2O , so less energy is released overall. If oxygen were plentiful, combustion would proceed to completion, producing CO_2 and H_2O . The other factors listed don't determine completeness in this way: excess oxygen promotes complete combustion, while high fuel quality or low temperature don't by themselves cause incomplete combustion—the key is the amount of oxygen available.

2. Which formula represents Ethene?

A. C_2H_4

B. C_2H_6

C. C_3H_6

D. CH_4

Ethene is an unsaturated hydrocarbon with a carbon-carbon double bond. For alkenes, the general pattern is C_nH_{2n} , and with two carbons that gives C_2H_4 . Structurewise, each carbon forms two C-H bonds and a C=C double bond between the two carbons, giving a total of four hydrogens. That's why C_2H_4 is the correct formula. The other options don't fit ethene: C_2H_6 would be ethane, a fully saturated alkane with single bonds; CH_4 is methane, a single-carbon molecule; C_3H_6 would correspond to a three-carbon hydrocarbon such as propene, not ethene.

3. Which ion is produced by alkalis in solution?

A. H^+

B. OH^-

C. Na^+

D. K^+

When alkalis dissolve in water, they release hydroxide ions. This is what makes the solution alkaline: the presence of OH^- increases the pH. For example, sodium hydroxide dissociates into Na^+ and OH^- . The ion that characterizes an alkali in solution is the hydroxide ion, OH^- , not H^+ , which comes from acids, nor the spectator cations Na^+ or K^+ . So the hydroxide ion is the produced species in solution by alkalis.

4. What color is universal indicator in a weak alkali?

- A. Blue**
- B. Purple**
- C. Green**
- D. Orange**

Universal indicator shows color changes according to pH, using a blend of dyes that cover a wide range. In this scale, blue appears for solutions that are mildly alkaline—pH just above 7 but not very high. A weak alkali has this gentle basicity, so the color you'd see is blue. The other colors fit differently: red to orange to yellow for acids, green around neutral, and purple for strongly alkaline solutions.

5. Which observation would indicate sulfate ions when BaCl₂ is used?

- A. White precipitate forms**
- B. Blue solution forms**
- C. No change**
- D. Color change to pink**

The idea being tested is the formation of an insoluble salt when a specific ion is present. When sulfate ions are in the solution, adding BaCl₂ provides Ba²⁺ ions that combine with SO₄²⁻ to form barium sulfate, BaSO₄, which is highly insoluble. Because BaSO₄ has almost no solubility, it precipitates out as a white solid. That white precipitate is the clear sign that sulfate ions are present. If there are no sulfate ions, no BaSO₄ precipitate forms and the solution stays basically unchanged. In practice, the test is often done under slightly acidic conditions to avoid interference from carbonate ions, which could also give a white precipitate with barium. The other visual changes described—blue solution or pink color—do not result from this reaction, so they don't indicate sulfate presence.

6. Which metal is more reactive, magnesium or lithium?

- A. Magnesium**
- B. Lithium**
- C. Sodium**
- D. Calcium**

Reactivity of metals is all about how easily a metal can lose electrons to form positive ions. The further up a metal is in its group, the more tightly its outer electrons are held, and the less reactive it tends to be; but alkali metals (-group 1) are especially reactive because they only have one outer electron to lose. Among Li and Mg, lithium is an alkali metal, while magnesium is an alkaline earth metal that has to lose two outer electrons. This makes lithium easier to oxidize and thus more reactive overall. In practice, lithium's lower first ionization energy means it can shed its outer electron more readily, so it reacts more vigorously with substances like water and acids than magnesium does. For example, lithium reacts readily with water to form lithium hydroxide and hydrogen, whereas magnesium reacts much more slowly with cold water (and more noticeably with steam). So lithium is the more reactive metal here.

7. What is the required condition for the chlorination of methane?

- A. Ultraviolet light (UV)**
- B. Heat at high temperature**
- C. A metal catalyst**
- D. High pressure**

Ultraviolet light provides the energy to break the chlorine-chlorine bond and start a free-radical chain reaction. When Cl_2 absorbs UV light, it splits into two chlorine radicals. These highly reactive $\text{Cl}\cdot$ species remove a hydrogen from methane, forming HCl and a methyl radical ($\text{CH}_3\cdot$). The methyl radical then reacts with another Cl_2 molecule to form chloromethane and regenerates a $\text{Cl}\cdot$, allowing the process to continue in a chain reaction. This radical mechanism explains why light is essential for chlorinating methane under typical conditions. Heat alone can drive reactions but is not the defining condition here, and a metal catalyst or high pressure isn't required for this process.

8. In a solution, the substance that is dissolved in another is called the

- A. Solvent**
- B. Solute**
- C. Catalyst**
- D. Precipitate**

In a solution, the substance dissolved in another is the solute. The part doing the dissolving is the solvent, usually present in greater amount; for example, sugar in water: water is the solvent and sugar is the solute. A catalyst speeds up a chemical reaction, not involved in dissolving, and a precipitate is a solid that forms and separates from solution. So the dissolved substance is the solute.

9. Which ion has a 1- charge?

- A. Nitrate ion**
- B. Sulfate ion**
- C. Carbonate ion**
- D. Ammonium ion**

Understanding how to read the overall charge of an ion from its formula is key. The net charge comes from the balance of electrons and protons in the ion; for polyatomic ions, the charge written after the formula is the total. The nitrate ion, NO_3^- , carries a single negative charge overall. Sulfate, SO_4^{2-} , and carbonate, CO_3^{2-} , both carry a -2 charge, while ammonium, NH_4^+ , carries a +1 charge. So the ion with a 1- charge is nitrate.

10. What does the mole measure?

- A. Mass
- B. Amount of substance**
- C. Volume
- D. Temperature

The mole is a counting unit for chemical particles, telling you how much substance you have by the number of particles it contains. One mole corresponds to 6.02×10^{23} particles (Avogadro's number), whether they are atoms, molecules, or ions. This lets us connect the amount of substance to its mass using the molar mass. If you know the mass and the molar mass, you can find the amount in moles with $n = \text{mass} / \text{molar mass}$. For example, water has a molar mass of about 18 g/mol, so 18 g of water is about 1 mole, containing roughly 6.02×10^{23} water molecules. Volume and temperature describe how much space the substance takes or how hot or cold it is, not how many particles are present. For gases at the same temperature and pressure, the amount in moles relates to volume, but the mole itself is defined as a count of particles, not as a measure of mass, volume, or temperature.

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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://igcseedexcelchemistry.examzify.com>

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

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