

WJEC GCSE CHEMISTRY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

<https://wjecgcsechemistry.examzify.com>



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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 type of water hardness can be removed by boiling?**
- A. Temporary Hard Water
 - B. Permanent Hard Water
 - C. Hardness of Water
 - D. Soft Water
- 2. Which statement lists the three main ideas of the particle model of matter used in GCSE Chemistry?**
- A. All substances are made of tiny particles; there are spaces between particles; the particles are in constant motion and their energy changes with temperature.
 - B. Particles are solid and fixed in place at all temperatures.
 - C. Matter is continuous and infinitely divisible without particles.
 - D. Only liquids have particles; gases have no particles.
- 3. What are the main practical skills assessed in WJEC GCSE Chemistry, and why are practicing them important?**
- A. Planning only
 - B. Performing experiments only
 - C. Analysing data and safety procedures
 - D. Planning, performing, analysing data, and evaluating experiments
- 4. Which boundary type is characterized by plates sliding past each other with no crust formation or destruction?**
- A. Conservative Boundary
 - B. Transform Boundary
 - C. Divergent Boundary
 - D. Convergent Boundary
- 5. Which process purifies a liquid by heating and then cooling it?**
- A. Filtration
 - B. Evaporation
 - C. Distillation
 - D. Chromatography

6. What is the purpose of desulfurizing fuels?

- A. To remove sulfur compounds to lower sulfur dioxide emissions.
- B. To increase octane rating.
- C. To prevent formation of nitrogen oxides.
- D. To produce more sulfur dioxide.

7. Which term tells the type and number of atoms in a substance?

- A. Empirical formula
- B. Molecular formula
- C. Simple formula
- D. Chemical formula

8. Which subatomic particle has a negative electric charge?

- A. Proton
- B. Electron
- C. Neutron
- D. Positron

9. What is true about catalysts?

- A. They are consumed in the reaction
- B. They change final products
- C. They provide alternative route with lower activation energy
- D. They increase concentration of reactants

10. What is the charge of an electron?

- A. Positive
- B. Negative
- C. Neutral
- D. Depends on atom

Answers

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

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Explanations

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1. Which type of water hardness can be removed by boiling?

- A. Temporary Hard Water**
- B. Permanent Hard Water
- C. Hardness of Water
- D. Soft Water

Temporary hard water contains dissolved bicarbonates of calcium and magnesium. When you boil it, these bicarbonates break down and release carbon dioxide, causing the acids to form carbonates that precipitate out as solid scale. A typical reaction is $\text{Ca}(\text{HCO}_3)_2 \rightarrow \text{CaCO}_3(\text{s}) + \text{CO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$. With the calcium and magnesium removed from solution, the water becomes softer. Permanent hard water, made from sulfates or chlorides of these ions, doesn't decompose on heating, so boiling doesn't remove it. Soft water already has low hardness, so boiling isn't needed.

2. Which statement lists the three main ideas of the particle model of matter used in GCSE Chemistry?

- A. All substances are made of tiny particles; there are spaces between particles; the particles are in constant motion and their energy changes with temperature.**
- B. Particles are solid and fixed in place at all temperatures.
- C. Matter is continuous and infinitely divisible without particles.
- D. Only liquids have particles; gases have no particles.

At GCSE, the particle model of matter is built on three ideas: all substances are made of tiny particles; there are spaces between those particles; and the particles are in constant motion with energy that changes with temperature. The statement that lists these three ideas is the best because it directly reflects this model: every substance is composed of small particles, there are gaps between them that explain why things compress or expand, and the particles are always moving with energy that increases when you heat them and decreases when you cool them. This helps explain why different states behave differently and how heating changes things. For example, heating adds energy to the particles, making them move faster and spread out more, which can cause a solid to melt or a liquid to vaporize. On the other hand, if a statement claims particles are fixed in place at all temperatures, or that matter is continuous without particles, or that only liquids have particles, it conflicts with the observable facts that solids and gases also consist of particles and that particles are always moving to some degree.

3. What are the main practical skills assessed in WJEC GCSE Chemistry, and why are practicing them important?

- A. Planning only
- B. Performing experiments only
- C. Analysing data and safety procedures
- D. Planning, performing, analysing data, and evaluating experiments**

The main practical skills being assessed are planning experiments, performing them safely and accurately, analysing the data collected, and evaluating the investigations. Planning involves deciding what to change, choosing suitable variables and controls, selecting appropriate measurements, and considering safety. Performing means carrying out the plan with careful technique, using equipment correctly, obtaining precise measurements, and following risk assessments. Analysing data is about turning measurements into meaningful information—calculating averages or rates, spotting trends, and checking for consistency. Evaluating experiments looks at sources of error, reliability and validity of results, and how the method could be improved. Practising all these together helps students design and carry out investigations, produce trustworthy evidence, and justify their conclusions, which is essential for GCSE success and real-world laboratory work.

4. Which boundary type is characterized by plates sliding past each other with no crust formation or destruction?

A. Conservative Boundary

B. Transform Boundary

C. Divergent Boundary

D. Convergent Boundary

Plates sliding horizontally past each other with no crust being created or destroyed describes a transform boundary. This boundary type is also called a conservative boundary, because the total amount of crust stays the same as the plates slip past one another. The motion is due to shear forces along faults, and earthquakes are common where rocks stick and then suddenly slip. An example is the San Andreas Fault in California. This differs from divergent boundaries, where new crust is formed as plates move apart, and convergent boundaries, where crust is destroyed as one plate dives beneath another.

5. Which process purifies a liquid by heating and then cooling it?

A. Filtration

B. Evaporation

C. Distillation

D. Chromatography

Distillation uses differences in boiling points to purify a liquid. By heating the liquid, it forms vapor, which is then cooled in a condenser to return to a liquid that is collected separately. The vapor carries the component with the lower boiling point, leaving higher-boiling impurities behind in the original mixture, giving a purer distillate. This differs from filtration, which only removes solids, or evaporation, which removes solvent but doesn't recapture a purified liquid by cooling. Chromatography separates components based on how they interact with a stationary phase and a mobile phase, not by heating and cooling the entire liquid. So the described method is distillation.

6. What is the purpose of desulfurizing fuels?

A. To remove sulfur compounds to lower sulfur dioxide emissions.

B. To increase octane rating.

C. To prevent formation of nitrogen oxides.

D. To produce more sulfur dioxide.

Removing sulfur from fuels is done to cut sulfur dioxide emissions when the fuel is burned. Sulfur compounds in petrol and diesel react with oxygen during combustion to form sulfur dioxide, which contributes to acid rain and respiratory problems. By desulfurizing, refineries help fuels burn cleaner and meet environmental rules. A lot of refining uses hydrodesulfurization with hydrogen and a catalyst to remove sulfur compounds. This isn't about increasing octane rating, which is about preventing engine knocking, nor about preventing NOx formation, which depends on combustion conditions and exhaust controls rather than sulfur content. Producing more sulfur dioxide would be counterproductive and is not the aim.

7. Which term tells the type and number of atoms in a substance?

- A. Empirical formula
- B. Molecular formula
- C. Simple formula**
- D. Chemical formula

The main idea here is how formulas represent what a substance is made of. A chemical formula can be written in different ways to show composition: the simplest way to describe what kinds of atoms are present and in what proportions is the simple (often called empirical) formula. This shows the types of atoms and their smallest whole number ratio, giving the basic building blocks that make up the substance. It doesn't tell you exactly how many atoms are in one molecule—that would be given by the molecular formula, which can be a multiple of the simple formula. The general term for any notation of a compound's composition is the chemical formula. In GCSE language, the simple formula is used to express the same idea as the empirical formula, so it's the best fit for describing the kinds of atoms and their simplest ratio in a substance.

8. Which subatomic particle has a negative electric charge?

- A. Proton
- B. Electron**
- C. Neutron
- D. Positron

Electric charge is a property that distinguishes particles. The electron carries a negative charge, the proton carries a positive charge, and the neutron has no net charge. A positron is the antimatter partner of the electron and also has a positive charge. So, the particle with negative charge is the electron. This negative charge explains why electrons are attracted to the positively charged nucleus and helps balance the overall charge of atoms when the numbers of electrons and protons match.

9. What is true about catalysts?

- A. They are consumed in the reaction
- B. They change final products
- C. They provide alternative route with lower activation energy**
- D. They increase concentration of reactants

Catalysts speed up reactions by providing an alternative route with a lower activation energy. Activation energy is the energy barrier that reacting particles must overcome to transform into products; by offering a pathway that requires less energy, more particles can react at the same temperature, so the rate increases. Catalysts aren't consumed in the reaction and they don't change the final amount or identity of the products—they only affect how quickly the reaction proceeds. They also don't increase the concentration of reactants; they simply make it easier for reactants to convert into products. So the statement about providing an alternative route with lower activation energy is the accurate description.

10. What is the charge of an electron?

- A. Positive
- B. Negative**
- C. Neutral
- D. Depends on atom

Electric charge on an electron is negative. The electron carries a negative elementary charge, opposite in sign to the positive charge of a proton and equal in magnitude. In atoms, the balance between electrons and protons gives neutral charge, but the electron itself remains negatively charged. If you add or remove electrons, the overall charge changes, but the electron's intrinsic charge stays negative. So the correct idea is that the electron has a negative charge.

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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://wjecgcsechemistry.examzify.com>

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

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