IGCSE EDEXCEL 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. A chromatogram that shows only one peak indicates the sample is:

A. A pure substance

B. A mixture

C. An alloy

D. A solvent

2. Which ion does lithium form?

A. Li^{2+}

B. Li^-

C. Li^+

D. Li^{3+}

3. If the temperature increases during a process, the reaction is

A. Exothermic

B. Endothermic

C. Isothermal

D. Spontaneous

4. How does the colour of the crude oil fractions change as you go down the distillation column?

A. Get darker

B. Get lighter

C. Stay the same

D. Change to bright colors

5. A hydrocarbon contains carbon and hydrogen only. Which statement is true?

A. It also contains oxygen

B. It contains nitrogen

C. It contains carbon and hydrogen only

D. It contains sulfur

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6. What color does universal indicator show at pH 14?

A. Red
B. Orange
C. Blue
D. Purple

7. Which hydroxide is formed when sodium reacts with water?

A. Lithium hydroxide
B. Sodium hydroxide
C. Potassium hydroxide
D. Magnesium hydroxide

8. What are the products when potassium reacts with water?

A. Potassium hydroxide and hydrogen
B. Potassium oxide and hydrogen
C. Potassium carbonate and hydrogen
D. Potassium chloride and hydrogen

9. Rusting can be prevented by covering iron in zinc; this method is called

A. Galvanisation
B. Coating
C. Electroplating
D. Alloying

10. How does adding a catalyst increase the rate of reaction?

A. It offers an alternative reaction pathway with a lower activation energy
B. It raises the temperature
C. It increases the surface area of reactants
D. It changes the equilibrium constant

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Answers

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

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Explanations

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1. A chromatogram that shows only one peak indicates the sample is:

A. A pure substance

B. A mixture

C. An alloy

D. A solvent

Seeing a single peak means there is only one component in the sample. In chromatography, each different substance interacts with the stationary phase and travels at a different rate with the mobile phase, so it shows up as its own peak. If the sample were a mixture, you'd expect multiple peaks, one for each component present. So a single peak is the sign of a pure substance. A solvent is just the liquid used to carry the sample, and an alloy is a solid metal mixture that chromatography isn't used to distinguish in this context; a mixture would not give a single peak.

2. Which ion does lithium form?

A. $Li2+$

B. $Li-$

C. $Li+$

D. $Li3+$

Lithium forms a +1 ion because it has one electron in its outer shell that it can lose to achieve a stable electron arrangement like a noble gas. By losing that single outer electron, lithium becomes $Li+$ with a full inner shell ($1s2$), which is energetically favorable. Losing two or three electrons would require a lot more energy, and gaining electrons to become $Li-$ is not typical for lithium. In compounds, lithium almost always exists as $Li+$.

3. If the temperature increases during a process, the reaction is

A. Exothermic

B. Endothermic

C. Isothermal

D. Spontaneous

When the temperature rises during a process, heat is leaving the system and entering the surroundings. That release of heat characterizes an exothermic reaction. In contrast, an endothermic reaction would take in heat from the surroundings, often making the surroundings feel cooler. If the temperature remained constant, the process would be isothermal, indicating no net heat transfer. Spontaneous describes whether a process can occur without continuous energy input, not the direction of heat flow.

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4. How does the colour of the crude oil fractions change as you go down the distillation column?

A. Get darker

B. Get lighter

C. Stay the same

D. Change to bright colors

As you go down the distillation column, the fractions become heavier, with larger and more complex hydrocarbon molecules and more impurities. These bigger molecules absorb more visible light, so the liquid looks darker. Lighter, top fractions contain smaller, simpler molecules that are more transparent, often pale or colourless, while the heavy bottom fractions and residues appear dark brown to black. So the colour getting darker reflects increasing molecular size and impurity content as you move deeper into the column.

5. A hydrocarbon contains carbon and hydrogen only. Which statement is true?

A. It also contains oxygen

B. It contains nitrogen

C. It contains carbon and hydrogen only

D. It contains sulfur

Hydrocarbons are compounds made only of carbon and hydrogen. This means any substance classified as a hydrocarbon must contain carbon and hydrogen and no other elements. The statement that it contains carbon and hydrogen only is therefore true. If a substance also contained oxygen, nitrogen, or sulfur, it would be a different type of compound, not a hydrocarbon.

6. What color does universal indicator show at pH 14?

A. Red

B. Orange

C. Blue

D. Purple

Universal indicator changes color with how acidic or basic a solution is, reflecting the hydrogen ion concentration. As a solution becomes more basic, the color moves from green toward blue and finally purple at the highest pH. A pH of 14 is the most strongly basic end of the scale, so the indicator shows purple. Red and orange signal acidity, while blue indicates a high but not the extreme base level.

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7. Which hydroxide is formed when sodium reacts with water?

A. Lithium hydroxide

B. Sodium hydroxide

C. Potassium hydroxide

D. Magnesium hydroxide

When an alkali metal reacts with water, it forms the metal hydroxide of that element and releases hydrogen gas. The product is the hydroxide of the metal involved. For sodium, this reaction gives sodium hydroxide, with hydrogen gas produced as a by-product. The balanced equation is 2 Na + 2 H2O 2 NaOH + H2. The other options would come from different metals (lithium or potassium hydroxide) or a different metal (magnesium hydroxide), not from sodium. So sodium hydroxide is the correct product.

8. What are the products when potassium reacts with water?

A. Potassium hydroxide and hydrogen

B. Potassium oxide and hydrogen

C. Potassium carbonate and hydrogen

D. Potassium chloride and hydrogen

When alkali metals meet water, they form a metal hydroxide and hydrogen gas. For potassium, this gives potassium hydroxide (KOH) and H2, as shown by the balanced equation 2K + 2H2O 2KOH + H2. Potassium hydroxide dissolves in water to make a strongly alkaline solution, while hydrogen gas bubbles off. The other options would require oxygen, carbon dioxide, or chlorine to be present, which isn't the case in this reaction.

9. Rusting can be prevented by covering iron in zinc; this method is called

A. Galvanisation

B. Coating

C. Electroplating

D. Alloying

The main idea is protecting iron by sacrificial protection: a more reactive metal is used to corrode in place of iron. Zinc is more reactive than iron, so when a zinc coating covers iron, zinc preferentially oxidizes in the presence of air and water. This means the zinc layer corrodes instead of the iron, forming zinc oxide/hydroxide and a barrier that keeps the iron underneath from rusting. Even if the coating is scratched, the exposed zinc nearby continues to protect the iron, extending the life of the metal. This specific protective method is called galvanisation. Other options are broader or describe different processes (coating in general, electroplating uses electricity to deposit metal, alloying changes the material itself rather than adding a protective outer layer), so galvanisation is the correct term.

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10. How does adding a catalyst increase the rate of reaction?

A. It offers an alternative reaction pathway with a lower activation energy

B. It raises the temperature

C. It increases the surface area of reactants

D. It changes the equilibrium constant

Lowering the activation energy by offering an alternative reaction pathway with a lower energy barrier is how a catalyst speeds up a reaction. Activation energy is the minimum energy molecules must have to transform into products. At a given temperature, only a fraction of molecules have enough energy to get over that barrier, so the reaction rate is limited. A catalyst provides a different route for the reaction and lowers that barrier, so more molecules can react in the same time frame. It does this by providing new steps or stabilizing transition states and intermediates on its surface, and it is not consumed in the process. Because it speeds up both forward and reverse reactions equally, the equilibrium position remains unchanged, even though the overall rate is higher. The other ideas don't explain how a catalyst works: raising temperature increases the fraction of energetic molecules; increasing surface area helps the reactants meet more often but isn't a catalyst; changing the equilibrium constant would alter the balance of products and reactants rather than the speed at which equilibrium is reached.

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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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