

IGCSE C10 Chemistry Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. What does the term 'mol' indicate in chemistry?**
 - A. A measure of temperature**
 - B. A unit measuring substance amount, equal to (6.022×10^{23}) particles**
 - C. A measure of volume in solutions**
 - D. A type of chemical reaction**

- 2. What is defined as a homogeneous mixture of substances, typically with a solute and solvent?**
 - A. Emulsion**
 - B. Colloid**
 - C. Solution**
 - D. Suspension**

- 3. Why is it important to reduce fossil fuel usage for environmental health?**
 - A. It increases dependency on renewable energy**
 - B. It reduces emissions of greenhouse gases and air pollutants**
 - C. It enhances soil fertility**
 - D. It has no significant impact**

- 4. What is one benefit of planting trees regarding climate change?**
 - A. Trees release carbon dioxide into the atmosphere**
 - B. Trees absorb carbon monoxide**
 - C. Trees absorb carbon dioxide through photosynthesis**
 - D. Trees increase soil erosion**

- 5. How can oxides of nitrogen emissions be minimized in vehicles?**
 - A. By using diesel engines exclusively**
 - B. By implementing catalytic converters in cars**
 - C. By increasing fuel consumption**
 - D. By reducing emissions from power plants**

- 6. What is the main reason for reducing methane emissions in agriculture?**
- A. To increase cattle production**
 - B. To mitigate climate change impact**
 - C. To enhance soil fertility**
 - D. To promote pesticide usage**
- 7. How do metal oxides typically behave in terms of acidity?**
- A. They are generally acidic**
 - B. They are generally neutral**
 - C. They are generally basic**
 - D. They have no consistent behavior**
- 8. What is the primary health effect of carbon monoxide exposure?**
- A. It increases respiratory infections**
 - B. It causes cardiovascular disease**
 - C. Toxic gas that binds to haemoglobin reducing oxygen transport**
 - D. It leads to chronic lung disease**
- 9. Which of the following is a potential long-term impact of acid rain on soil health?**
- A. Increased nutrient availability**
 - B. Soil degradation and loss of vitality**
 - C. Improvement of soil pH**
 - D. Boost in microorganism activity**
- 10. What is the function of filtration in the water treatment process?**
- A. To remove odors**
 - B. To remove large solids**
 - C. To remove small insoluble particles**
 - D. To add minerals**

Answers

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

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Explanations

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1. What does the term 'mol' indicate in chemistry?

- A. A measure of temperature
- B. A unit measuring substance amount, equal to (6.022×10^{23}) particles**
- C. A measure of volume in solutions
- D. A type of chemical reaction

The term 'mol' is a fundamental concept in chemistry that signifies a unit for measuring the amount of substance. In particular, one mole is defined as exactly (6.022×10^{23}) particles, which can be atoms, molecules, ions, or other entities. This number, known as Avogadro's number, provides a bridge between the atomic scale and macroscopic amounts of material, allowing chemists to count particles by weighing them. By utilizing the mole, chemists can easily relate the mass of a substance to the number of entities it contains, enabling quantitative analysis and calculations in chemical reactions and processes. Other options describe different concepts in chemistry: one speaks to temperature, another to volume measurements related to solutions, and the last one to types of chemical reactions, none of which capture the specific purpose and relevance of the mole as a unit for quantifying substance amount.

2. What is defined as a homogeneous mixture of substances, typically with a solute and solvent?

- A. Emulsion
- B. Colloid
- C. Solution**
- D. Suspension

A homogeneous mixture of substances is defined as a solution. In a solution, one substance (the solute) is uniformly dissolved in another substance (the solvent). This uniformity means that the composition is consistent throughout, and individual particles of solute are not visible. For example, when table salt (the solute) is dissolved in water (the solvent), it creates a clear and uniform solution where the salt is evenly distributed at a molecular level. Emulsions and colloids do not match this definition, as they consist of two or more phases or have particles that are not completely dissolved. Emulsions, such as oil and vinegar, are mixtures of liquids that typically do not mix and require an emulsifying agent. Colloids have larger particles than those in solutions, which can scatter light and often result in a milky appearance, but they also do not settle out of the mixture. Suspensions consist of larger, visible particles that may eventually settle out when left undisturbed, distinguishing them from the uniform nature of solutions. Therefore, the term that most accurately captures the concept of a homogeneous mixture of a solute and solvent is a solution.

3. Why is it important to reduce fossil fuel usage for environmental health?

- A. It increases dependency on renewable energy
- B. It reduces emissions of greenhouse gases and air pollutants**
- C. It enhances soil fertility
- D. It has no significant impact

Reducing fossil fuel usage is critically important for environmental health primarily because it leads to a significant decrease in the emissions of greenhouse gases and air pollutants. Fossil fuels, when burned for energy, release carbon dioxide and other greenhouse gases into the atmosphere. These gases contribute to climate change by trapping heat and causing global temperatures to rise. Moreover, the combustion of fossil fuels also emits various air pollutants, including sulfur dioxide, nitrogen oxides, and particulate matter, which can have detrimental effects on air quality and public health. These pollutants are associated with respiratory diseases, cardiovascular problems, and premature death, adversely affecting the well-being of communities. Transitioning away from fossil fuels not only mitigates these harmful emissions but also promotes the adoption of cleaner energy sources. This shift is essential for achieving sustainability and protecting both the environment and human health for future generations.

4. What is one benefit of planting trees regarding climate change?

- A. Trees release carbon dioxide into the atmosphere
- B. Trees absorb carbon monoxide
- C. Trees absorb carbon dioxide through photosynthesis**
- D. Trees increase soil erosion

One significant benefit of planting trees in relation to climate change is that trees absorb carbon dioxide through the process of photosynthesis. During photosynthesis, trees take in carbon dioxide from the atmosphere and use sunlight to convert it into energy, releasing oxygen as a byproduct. This process plays a crucial role in reducing the concentration of carbon dioxide in the atmosphere, a greenhouse gas that contributes to global warming. By effectively sequestering carbon dioxide, trees help mitigate climate change and improve air quality. The other options do not represent benefits related to climate change. For instance, the process of trees releasing carbon dioxide would actually contribute to greenhouse gas emissions rather than helping to combat climate change. Additionally, while trees do absorb some pollutants like carbon monoxide, their primary role regarding climate change is tied to carbon dioxide. Lastly, trees are known to prevent soil erosion, so suggesting that they increase soil erosion contradicts their environmental benefits.

5. How can oxides of nitrogen emissions be minimized in vehicles?

- A. By using diesel engines exclusively**
- B. By implementing catalytic converters in cars**
- C. By increasing fuel consumption**
- D. By reducing emissions from power plants**

Implementing catalytic converters in vehicles is an effective way to minimize emissions of nitrogen oxides (NO_x). Catalytic converters are devices installed in the exhaust systems of vehicles that contain catalysts, usually made of precious metals like platinum, palladium, and rhodium. These catalysts facilitate chemical reactions that convert harmful gases produced during combustion. In the case of nitrogen oxides, the catalytic converter promotes reactions that convert NO_x back into nitrogen and oxygen, which are harmless and naturally occurring gases. This process significantly reduces the amount of NO_x emitted into the atmosphere from vehicle exhaust. The other options do not effectively address the reduction of nitrogen oxides emissions. Relying solely on diesel engines often leads to higher NO_x emissions compared to gasoline engines. Increasing fuel consumption would typically result in higher emissions across the board, including NO_x. While reducing emissions from power plants is important for overall air quality, it does not directly impact emissions from individual vehicles. Therefore, using catalytic converters is a targeted and efficient method to specifically tackle nitrogen oxide emissions from vehicles.

6. What is the main reason for reducing methane emissions in agriculture?

- A. To increase cattle production**
- B. To mitigate climate change impact**
- C. To enhance soil fertility**
- D. To promote pesticide usage**

Reducing methane emissions in agriculture is primarily aimed at mitigating the impact of climate change. Methane is a potent greenhouse gas, significantly more effective than carbon dioxide at trapping heat in the atmosphere over a short time frame. Agricultural practices, particularly those involving livestock, are major sources of methane emissions through enteric fermentation during digestion and manure management. By addressing these emissions, agriculture can play a crucial role in reducing the overall greenhouse gas levels, thereby contributing to global efforts to combat climate change and its associated impacts, such as extreme weather events, rising sea levels, and disruptions to ecosystems. This focus on mitigation aligns with international climate agreements and sustainability goals, emphasizing the importance of reducing greenhouse gases for a healthier planet.

7. How do metal oxides typically behave in terms of acidity?

- A. They are generally acidic
- B. They are generally neutral
- C. They are generally basic**
- D. They have no consistent behavior

Metal oxides typically behave as basic substances when they react with acids. This characteristic is largely due to the nature of metal oxides, which are formed when metals react with oxygen. Most metal oxides, particularly those of metals that are found on the left side of the periodic table, have a strong tendency to donate electrons and react with acids to form salts and water. For example, when a metal oxide like magnesium oxide (MgO) reacts with hydrochloric acid (HCl), it produces magnesium chloride (MgCl₂) and water (H₂O). This reaction demonstrates the basic nature of metal oxides, reinforcing their classification as basic oxides. In contrast, nonmetal oxides tend to be acidic, which is why the behavior of metal oxides is distinct. They do not exhibit the range of acidic or neutral properties that some other compounds may show. Instead, they consistently react as basic substances, making them an important class of compounds in various chemical reactions, especially in neutralizing acids.

8. What is the primary health effect of carbon monoxide exposure?

- A. It increases respiratory infections
- B. It causes cardiovascular disease
- C. Toxic gas that binds to haemoglobin reducing oxygen transport**
- D. It leads to chronic lung disease

Carbon monoxide (CO) exposure primarily poses a significant health threat due to its ability to bind with hemoglobin in red blood cells more effectively than oxygen. When carbon monoxide is inhaled, it competes with oxygen for binding sites on hemoglobin, forming carboxyhemoglobin, which reduces the amount of oxygen that can be transported throughout the body. This can lead to symptoms such as headaches, dizziness, weakness, and in severe cases, it can result in loss of consciousness or death, as tissues become deprived of oxygen necessary for survival. While carbon monoxide exposure can have wider implications for health, such as exacerbating pre-existing cardiovascular disease or respiratory conditions, the most critical and direct health effect is indeed its impact on oxygen transport by binding to hemoglobin. The effects rely on the concentration of CO and the duration of exposure, with acute exposure being especially dangerous.

9. Which of the following is a potential long-term impact of acid rain on soil health?

- A. Increased nutrient availability**
- B. Soil degradation and loss of vitality**
- C. Improvement of soil pH**
- D. Boost in microorganism activity**

Acid rain can have a significant long-term impact on soil health, primarily leading to soil degradation and a loss of vitality. This phenomenon occurs due to the lower pH levels associated with acid rain, which can leach essential nutrients and minerals from the soil, making them less available to plants. Over time, this depletion of nutrients can result in a decline in soil fertility, impacting plant growth and ecosystem health. Additionally, the acidic conditions can harm soil-dwelling organisms, including beneficial microorganisms that play a crucial role in nutrient cycling and organic matter decomposition. This disruption can further impair the soil's ability to support healthy plant life, contributing to long-term degradation. In contrast, other options suggest improvements or positive changes that are not typically associated with the effects of acid rain on soil. For example, an increase in nutrient availability or an improvement of soil pH contradicts the well-documented negative impacts of acid rain. The boost in microorganism activity would not be a consequence of acid rain; rather, it typically leads to a decrease due to unfavorable soil conditions. Thus, recognizing the detrimental effects of acid rain on soil health is vital for understanding its broader environmental impact.

10. What is the function of filtration in the water treatment process?

- A. To remove odors**
- B. To remove large solids**
- C. To remove small insoluble particles**
- D. To add minerals**

In the context of water treatment, filtration serves a crucial role in improving water quality by separating unwanted materials from the water. The primary function of filtration is to remove small insoluble particles, which can include sand, silt, and other particulates that might not be effectively eliminated through other methods. During the filtration process, water is passed through a medium such as sand or activated carbon, which captures these tiny particles. This process not only helps in clearing the water but also plays a significant role in protecting downstream equipment and ensuring that the water is safe for consumption. The removal of these small particles is essential, as they can harbor pathogens and contribute to turbidity in the water, leading to potential health risks. While odors and large solids may also be dealt with during water treatment, filtration specifically targets those small, suspended particles that can affect the clarity and overall quality of the water. Adding minerals is a separate stage in certain water treatment processes aimed at enhancing the taste or re-mineralizing the water after it has been treated. Thus, the choice related to the removal of small insoluble particles accurately reflects the primary function of filtration in the water treatment process.

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://igcsec10chem.examzify.com>

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

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