ARIZONA STATE UNIVERSITY (ASU) GLG108 WATER PLANET MIDTERM 2 PRACTICE EXAM (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. What impact do urban heat islands have on water resources?

A. They decrease water quality

B. They increase evaporation rates and water demand

C. They enhance groundwater recharge

D. They lower water temperatures

2. What role does reclaimed water play in cooling systems like those in Phoenix?

A. Enhances electrical generation efficiency

B. Reduces the need for freshwater

C. Increases heat resistance in machinery

D. Decreases energy consumption

3. Which of the following factors does NOT influence water availability?

A. Climate

B. Population growth

C. Income level

D. Water management policies

4. Which of the following is a consequence of reaching a 'dead pool' status in a reservoir?

A. Increased water supply

B. Loss of water supply capability

C. Enhanced ecological conditions

D. Regulated water quality

5. What is hydraulic fracturing mainly used for?

A. Water conservation

B. Electricity generation

C. Extracting oil and gas

D. Water recycling

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6. What are Pathogens?

A. Microbes that cause diseases
B. Chemical pollutants in water
C. Natural minerals beneficial to health
D. Non-toxic substances in aquatic systems

7. What is a key impact of excess nitrogen in ecosystems?

A. Increased biodiversity
B. Decreased soil fertility
C. Eutrophication in water bodies
D. Heightened carbon capture

8. What is a fundamental approach to stormwater management?

A. Maximizing runoff into terrestrial areas
B. Eliminating all vegetation around water bodies
C. Constructing retention basins to catch runoff
D. Improving urban wastewater treatment processes

9. Which of the following is a major factor contributing to storm surge severity?

A. Ocean currents
B. Wind speed and direction
C. Atmospheric pressure
D. All of the above

10. Where is most of the Earth's freshwater stored?

A. In rivers and lakes
B. In glaciers and ice caps
C. In the ocean
D. In the atmosphere

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Answers

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

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Explanations

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1. What impact do urban heat islands have on water resources?

A. They decrease water quality

B. They increase evaporation rates and water demand

C. They enhance groundwater recharge

D. They lower water temperatures

Urban heat islands, which are urban areas that experience significantly warmer temperatures than their rural counterparts due to human activities and modifications to land surfaces, have notable impacts on water resources. By increasing evaporation rates, urban heat islands lead to a more rapid loss of water from surfaces such as lakes, rivers, and reservoirs. Higher temperatures can accelerate the process of evaporation, resulting in greater overall water loss from these sources. Additionally, as evaporation rates increase, the demand for water for activities like irrigation, cooling, and drinking also tends to rise. This can put additional pressure on local water supplies, as communities may need to extract more water to meet their needs, further straining water resources. This dynamic often leads to a cycle where increased temperatures from the urban heat island effect contribute to higher water consumption, thus highlighting the interconnectedness of urban temperature patterns and water management challenges. In contrast to this, the other options do not accurately reflect the primary impacts of urban heat islands on water resources. Urban heat islands do not typically enhance groundwater recharge, lower water temperatures, or directly decrease water quality in a straightforward manner. Understanding the relationship between urban heat islands and water resources is crucial for effective urban planning and water management strategies.

2. What role does reclaimed water play in cooling systems like those in Phoenix?

A. Enhances electrical generation efficiency

B. Reduces the need for freshwater

C. Increases heat resistance in machinery

D. Decreases energy consumption

Reclaimed water plays a significant role in cooling systems, particularly in arid regions like Phoenix, where freshwater resources are limited. By using reclaimed water—treated wastewater that is recycled for various purposes—these cooling systems reduce the dependency on freshwater sources. This is crucial in urban areas where water scarcity can be a pressing issue. Utilizing reclaimed water not only helps maintain the cooling efficiency necessary for various industrial processes but also supports sustainable water management practices. This approach assists in conserving freshwater for essential uses while still ensuring that cooling systems operate effectively.

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3. Which of the following factors does NOT influence water availability?

A. Climate

B. Population growth

C. Income level

D. Water management policies

Income level does not directly influence the physical availability of water. While it's true that income level can affect an individual's or community's access to water through economic means, it does not play a role in the natural factors that determine how much water is available, such as climate conditions, geographic features, or hydrological cycles. Climate significantly influences the availability of water by determining precipitation patterns, evaporation rates, and temperature, which in turn affect the replenishment of natural water sources. Population growth impacts water availability by increasing demand for water resources, potentially leading to over-extraction and depletion of those resources. Water management policies are crucial as they dictate how water resources are allocated and used, impacting overall availability and sustainability. Hence, while income can affect access and distribution, it does not change the actual availability of water in the environment.

4. Which of the following is a consequence of reaching a 'dead pool' status in a reservoir?

A. Increased water supply

B. Loss of water supply capability

C. Enhanced ecological conditions

D. Regulated water quality

Reaching a 'dead pool' status in a reservoir signifies that the water level has dropped to a point where it can no longer flow out of the reservoir through the outlet works or dam. Consequently, this results in a loss of water supply capability. In this situation, the reservoir is effectively unable to release water downstream for various uses, including agricultural irrigation, municipal supply, or hydroelectric power generation. This condition can lead to severe water shortages for communities and ecosystems that rely on this water, highlighting the critical implications of reaching dead pool levels in water resource management.

5. What is hydraulic fracturing mainly used for?

A. Water conservation

B. Electricity generation

C. Extracting oil and gas

D. Water recycling

Hydraulic fracturing, commonly known as fracking, is primarily employed for extracting oil and gas from underground rock formations. This process involves injecting a high-pressure fluid mixture into the subsurface to create fractures in the rock. The fractures enhance the flow of hydrocarbons, allowing for increased recovery rates of oil and gas that are otherwise trapped in the rock. This technique has significantly changed the energy landscape by enabling access to previously unreachable fossil fuel resources, increasing domestic energy production, and impacting market dynamics. The other options listed do not align with the primary application of hydraulic fracturing; for instance, while water conservation and recycling are essential for sustainability, they are not the fundamental purpose of fracking. Similarly, although electricity generation may utilize natural gas gained through fracking, the direct objective of the method is the extraction itself.

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6. What are Pathogens?

A. Microbes that cause diseases

B. Chemical pollutants in water

C. Natural minerals beneficial to health

D. Non-toxic substances in aquatic systems

Pathogens are defined as microbes that cause diseases. This includes a variety of microorganisms such as bacteria, viruses, protozoa, and fungi that can infect living organisms, including humans, animals, and plants, leading to a wide range of illnesses. The significance of pathogens in water systems is particularly concerning, as contaminated water can serve as a vector for disease transmission, impacting public health and the environment. In contrast, chemical pollutants refer to harmful substances introduced into water systems through human activities, but they do not necessarily fall under the category of pathogens. Natural minerals, while important for health, have beneficial properties rather than pathogenic characteristics. Non-toxic substances in aquatic ecosystems, while an essential part of maintaining water quality, do not involve disease-causing agents and therefore are distinct from pathogens. Understanding what constitutes a pathogen is crucial for addressing issues related to water safety and disease prevention.

7. What is a key impact of excess nitrogen in ecosystems?

A. Increased biodiversity

B. Decreased soil fertility

C. Eutrophication in water bodies

D. Heightened carbon capture

Excess nitrogen in ecosystems primarily leads to eutrophication in water bodies. When nitrogen from fertilizers, sewage, or other sources enters aquatic environments, it acts as a nutrient that stimulates excessive growth of algae, known as algal blooms. These blooms can significantly deplete oxygen levels in the water as they die and decompose, leading to hypoxic conditions that are harmful to aquatic life. This process disrupts the balance of the ecosystem, resulting in reduced biodiversity, fish kills, and changes in species composition. In contrast, while increased biodiversity and heightened carbon capture may appear beneficial, they are generally not direct outcomes of excess nitrogen. Decreased soil fertility is also misleading in this context; instead, excess nitrogen can initially enhance soil fertility but ultimately contribute to environmental degradation. Therefore, the most accurate and significant impact of excess nitrogen in ecosystems is the process of eutrophication.

8. What is a fundamental approach to stormwater management?

A. Maximizing runoff into terrestrial areas

B. Eliminating all vegetation around water bodies

C. Constructing retention basins to catch runoff

D. Improving urban wastewater treatment processes

Constructing retention basins to catch runoff is a fundamental approach to stormwater management because these basins are designed to temporarily hold excess stormwater runoff, allowing it to slowly percolate into the ground or be released at a controlled rate. This method helps to reduce the risk of flooding, minimizes soil erosion, and improves water quality by allowing sediment and pollutants to settle before the water is released into nearby rivers or lakes. Retention basins also provide an opportunity for groundwater recharge, which is essential for maintaining the water balance in urban areas. This approach contrasts with the other options. Maximizing runoff into terrestrial areas can lead to increased flooding and degradation of ecosystems. Eliminating all vegetation around water bodies disrupts natural filtration processes and habitats, leading to poorer water quality. Improving urban wastewater treatment processes, while important, does not directly manage stormwater runoff, which is a separate but interconnected issue in urban planning and environmental management.

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9. Which of the following is a major factor contributing to storm surge severity?

A. Ocean currents

B. Wind speed and direction

C. Atmospheric pressure

D. All of the above

Storm surge severity is significantly influenced by a combination of factors, notably wind speed and direction, ocean currents, and atmospheric pressure. Each of these elements plays a crucial role in determining how high the water level rises during a storm. Wind speed and direction are primary contributors because strong winds, particularly those associated with tropical storms and hurricanes, push water towards the shore. The direction of these winds can also affect how concentrated the surge is in specific areas, leading to higher water levels in certain locations. Ocean currents can amplify or mitigate the effects of a storm surge. For instance, if a storm surge coincides with an outgoing current, the combined effects can lead to exceptionally high water levels. Conversely, an incoming current can help to reduce the overall surge effect. Understanding ocean currents is essential to predicting the surge's impact accurately. Atmospheric pressure also plays a pivotal role in storm surge formation. As a storm approaches, the atmospheric pressure over the ocean decreases. This reduction in pressure allows water levels to rise, contributing to the overall storm surge. Lower pressure systems can lead to a significant increase in water level, resulting in a more severe surge. Thus, the interplay of these three factors—wind speed and direction, ocean currents, and atmospheric pressure—collectively contributes to

10. Where is most of the Earth's freshwater stored?

A. In rivers and lakes

B. In glaciers and ice caps

C. In the ocean

D. In the atmosphere

Most of the Earth's freshwater is stored in glaciers and ice caps. This significant reserve of freshwater is primarily found in polar regions and high mountain ranges, where the accumulation of snow and ice occurs over many years. As the ice builds up, it compresses and forms glaciers, effectively trapping vast amounts of freshwater in a solid state. Rivers and lakes, while important sources of freshwater, contain only a fraction of the Earth's total supply, generally less than 1%. The ocean, on the other hand, is primarily saline water and does not contribute to the global freshwater supply. The atmosphere contains some moisture, but again, this quantity is minuscule when compared to the massive storage capabilities of glaciers and ice caps. Thus, glaciers and ice caps are crucial in understanding Earth's hydrology and the impact of climate change, as melting ice affects sea levels and freshwater availability.

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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://asu-glg108midterm2.examzify.com

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

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