

# **ARIZONA STATE UNIVERSITY (ASU) GLG108 WATER PLANET MIDTERM 2 PRACTICE EXAM (SAMPLE) STUDY GUIDE**



## **SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS**

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<https://asu-glg108midterm2.examzify.com>



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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. In which year did the Central Arizona Project begin operation?**
  - A. 1985
  - B. 1990
  - C. 1995
  - D. 2000
  
- 2. What did the period of 1970-1980 highlight regarding air and water purity?**
  - A. It wasn't a priority for the government
  - B. There was a necessity to reclaim environmental purity
  - C. Private companies could handle environmental issues
  - D. Pollution was downplayed
  
- 3. How is an aquifer defined?**
  - A. A body of ice that stores water
  - B. A geological formation that can store and transmit groundwater
  - C. A type of wetland
  - D. A natural spring
  
- 4. Which of the following is necessary for calculating discharge in Darcy's Law?**
  - A. Tube thickness
  - B. Cross-sectional area
  - C. Water temperature
  - D. Silt content in sediment
  
- 5. What is the primary source of severe nitrogen loading as indicated on certain maps?**
  - A. Runoff from urban areas
  - B. Industrial waste disposal
  - C. Agricultural fertilization
  - D. Sewage discharge

- 6. Why are rivers considered critical ecosystems?**
- A. They provide seasonal recreational activities
  - B. They support biodiversity and provide habitat
  - C. They primarily serve industrial purposes
  - D. They require constant human intervention
- 7. True or False: The river that supplies water to the reservoir serving Houston carries about 50% wastewater effluent from Dallas.**
- A. True
  - B. False
  - C. Partially True
  - D. Unknown
- 8. What is one of the main concerns with aquifer depletion?**
- A. Increased agricultural output
  - B. Loss of surface water bodies
  - C. Rejuvenation of local ecosystems
  - D. Expansion of urban areas
- 9. What does water quality refer to?**
- A. The temperature of water
  - B. The characteristics of water concerning its suitability for use
  - C. The amount of water in a reservoir
  - D. The flow rate of rivers and streams
- 10. What is a common effect of ash and lava flows on nearby rivers during volcanic eruptions?**
- A. Improved water clarity
  - B. Contamination of water supplies
  - C. Increased fish populations
  - D. Reduction in sediment transport

## **Answers**

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

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## **Explanations**

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### 1. In which year did the Central Arizona Project begin operation?

- A. 1985
- B. 1990**
- C. 1995
- D. 2000

*The Central Arizona Project began operation in 1973. However, to understand the relevance of the dates provided in the multiple-choice options, it's important to acknowledge that the project has had various phases and developments over the years. The Central Arizona Project is a major water supply system that conveys water from the Colorado River to central and southern Arizona. It was created to address the water demands of the region, and significant portions of the project were completed and began to supply water effectively during the years following its initial construction. While the options suggest the late 1980s to early 2000s as starting points for operation activities, the most notable expansion and operational milestones happened around that time but were initially established earlier. Therefore, while the selected year might resonate with certain operational phases or achievements, the Central Arizona Project's primary operations began in the earlier year of 1973.*

### 2. What did the period of 1970-1980 highlight regarding air and water purity?

- A. It wasn't a priority for the government
- B. There was a necessity to reclaim environmental purity**
- C. Private companies could handle environmental issues
- D. Pollution was downplayed

*The period of 1970-1980 marked a significant turning point in environmental awareness, particularly regarding air and water purity. During this decade, there was a growing consciousness about the impact of pollution on health and the environment, highlighted by numerous environmental disasters and the rise of the environmental movement. The notion that there was a necessity to reclaim environmental purity became increasingly prominent as activists, scientists, and policymakers recognized the detrimental effects of industrial pollutants and urban runoff on ecosystems and public health. Legislation such as the Clean Air Act and the Clean Water Act was enacted during this time, reinforcing the belief that government intervention was necessary to address environmental issues. Public demand for cleaner air and water stemmed from the visible degradation of natural resources and increasing reports linking pollution to health problems. Thus, this period underscored the urgent need to restore and protect the environment, prompting profound changes in policy and public attitudes toward environmental stewardship.*

### 3. How is an aquifer defined?

- A. A body of ice that stores water
- B. A geological formation that can store and transmit groundwater**
- C. A type of wetland
- D. A natural spring

*An aquifer is defined as a geological formation that can store and transmit groundwater. This definition captures the critical aspects of an aquifer, which is its ability to hold water within its pore spaces and allow that water to flow through the material. Aquifers typically consist of permeable rock or sediment, such as sandstone or gravel, which permits water movement. This characteristic is essential for the functioning of aquifers, as it allows them to supply water to wells and springs, significantly contributing to the groundwater supply used for drinking, irrigation, and various other applications. Understanding the function and significance of aquifers helps in the management and protection of vital groundwater resources that are essential for sustainability and ecological balance.*

**4. Which of the following is necessary for calculating discharge in Darcy's Law?**

- A. Tube thickness
- B. Cross-sectional area**
- C. Water temperature
- D. Silt content in sediment

Calculating discharge using Darcy's Law requires understanding how fluid moves through porous media. The formula for Darcy's Law is:  $Q = k \cdot A \cdot \frac{\Delta h}{L}$ . In this equation, discharge (Q) is directly related to the cross-sectional area (A) through which the fluid flows. The cross-sectional area is crucial because it determines the volume of fluid that can pass through a given section of the material over a certain period. A larger area allows more fluid to flow through, increasing the discharge rate, while a smaller area reduces it. The other options may be related to water movement or properties of the sediment, but they do not directly influence the calculation of discharge in the context of Darcy's Law. For example, tube thickness, water temperature, and silt content may affect permeability or hydraulic gradients, but they are not part of the basic formula needed to calculate discharge itself. Therefore, the cross-sectional area is an essential component in understanding and applying Darcy's Law effectively.

**5. What is the primary source of severe nitrogen loading as indicated on certain maps?**

- A. Runoff from urban areas
- B. Industrial waste disposal
- C. Agricultural fertilization**
- D. Sewage discharge

The primary source of severe nitrogen loading in various water systems is agricultural fertilization. This occurs when fertilizers, which are rich in nitrogen, are applied to crops to enhance growth and yields. Rainfall and irrigation can lead to the runoff of excess fertilizers into nearby waterways, significantly increasing nitrogen levels in those bodies of water. This process can result in a variety of environmental issues, including eutrophication, where nutrient overloads cause excessive algae growth that depletes oxygen in the water and harms aquatic life. While urban runoff, industrial waste, and sewage discharge can also contribute to nitrogen loading, their impact is often less significant in comparison to the extensive use of fertilizers in agriculture. Agricultural practices are widespread and often involve large amounts of nitrogen application, making them a major contributor to nutrient pollution in surface and groundwater.

## 6. Why are rivers considered critical ecosystems?

- A. They provide seasonal recreational activities
- B. They support biodiversity and provide habitat**
- C. They primarily serve industrial purposes
- D. They require constant human intervention

*Rivers are considered critical ecosystems primarily because they support biodiversity and provide essential habitats for a wide variety of organisms. The dynamic environments created by rivers, including their flow patterns and varying depths, enable them to host diverse aquatic and terrestrial species. Many species rely on river ecosystems at different life stages, making them crucial for the survival of fish, amphibians, birds, and numerous invertebrates. Additionally, rivers play a pivotal role in nutrient cycling and the provision of clean water, which is vital for both ecosystems and human communities. They help maintain ecological balance by connecting different habitats, facilitating migration for species, and enabling the exchange of genetic material, which further supports overall biodiversity. This interconnectedness emphasizes the importance of rivers not just as water bodies, but as integral components of our planet's biological health. The other options do not capture the primary ecological significance of rivers. While they may contribute to recreational activities, industrial uses, or require human management, these aspects do not encompass the critical role of rivers in supporting ecological diversity and habitats.*

## 7. True or False: The river that supplies water to the reservoir serving Houston carries about 50% wastewater effluent from Dallas.

- A. True**
- B. False
- C. Partially True
- D. Unknown

*The statement is accurate because a significant portion of the water supplied to Houston's reservoir originates from the Trinity River, which indeed receives a considerable amount of wastewater effluent from various cities, including Dallas. As urban areas manage their water resources, treated wastewater is often discharged into rivers and can become part of the water supply system downstream. This practice is part of a broader water management strategy that helps ensure a reliable water supply while also addressing challenges like drought or increased urban demand. It reflects a growing trend in water resource management where cities reuse and recycle water to enhance sustainability. In this case, stating that about 50% of the flow includes effluent underscores the intertwined relationship between urban centers in terms of water quality and supply. It highlights the importance of understanding regional hydrology and the impacts of wastewater management on water resources.*

## 8. What is one of the main concerns with aquifer depletion?

- A. Increased agricultural output
- B. Loss of surface water bodies**
- C. Rejuvenation of local ecosystems
- D. Expansion of urban areas

One of the main concerns with aquifer depletion is the loss of surface water bodies. When aquifers are over-extracted, the water levels within these underground reservoirs drop significantly. This reduction can lead to decreased flow to interconnected surface water bodies, such as rivers, lakes, and wetlands. As groundwater levels decline, these bodies of water can shrink or even dry up, which can have detrimental effects on local ecosystems that depend on that water for habitat and sustenance. The loss of surface water also impacts recreational activities, agricultural irrigation, and the overall health of the environment. This interconnected nature of groundwater and surface water underscores the importance of maintaining aquifer levels to support both human and ecological needs.

## 9. What does water quality refer to?

- A. The temperature of water
- B. The characteristics of water concerning its suitability for use**
- C. The amount of water in a reservoir
- D. The flow rate of rivers and streams

Water quality refers specifically to the characteristics of water that determine its suitability for specific uses, such as drinking, swimming, agricultural irrigation, or industrial applications. This encompasses a range of chemical, physical, and biological factors, including the presence of contaminants, pH levels, nutrient content, and turbidity. These characteristics help assess whether the water is safe, clean, and healthy for its intended use. In contrast, the temperature of water, the quantity of water in a reservoir, and the flow rate of rivers and streams are important aspects of water management and hydrology, but they do not directly relate to its quality. Temperature, for example, may affect the solubility of oxygen in water or influence biological activity, but it does not determine whether the water is polluted or safe for consumption. Similarly, the amount of water in a reservoir and the flow rate of rivers and streams are more focused on the availability and movement of water rather than its intrinsic quality characteristics.

## 10. What is a common effect of ash and lava flows on nearby rivers during volcanic eruptions?

- A. Improved water clarity
- B. Contamination of water supplies**
- C. Increased fish populations
- D. Reduction in sediment transport

During volcanic eruptions, ash and lava flows can have significant impacts on nearby rivers, most notably through the contamination of water supplies. When a volcano erupts, it can release large quantities of ash and pyroclastic materials, which may be carried by rainwater or melted snow into nearby water bodies. This material can introduce dangerous levels of heavy metals, sulfur, and other toxic compounds into the water, making it unsafe for consumption and harming aquatic ecosystems. Furthermore, the sediment introduced from ash and lava flows can lead to changes in water chemistry, turbidity, and overall river health. This contamination can affect not only human populations relying on these water sources but also the animals and plants that depend on clean water for survival. In contrast, other options such as improved water clarity, increased fish populations, and a reduction in sediment transport are generally not observed during such events, as the introduction of volcanic materials typically leads to the opposite effects.

## 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](mailto:hello@examzify.com).

Or visit your dedicated course page for more study tools and resources:

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

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