

NORTH CAROLINA SURFACE WATER MATH PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://ncsurfacewatermath.examzify.com>



Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

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

SAMPLE

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

SAMPLE

- 1. How do phytoplankton impact surface water ecosystems?**
 - A. They deplete oxygen in the water.
 - B. They provide food for other aquatic organisms.
 - C. They act as parasites on fish.
 - D. They absorb harmful pollutants.
- 2. How can community involvement enhance surface water protection?**
 - A. By creating more recreational areas around water bodies
 - B. Community events can raise awareness and foster stewardship initiatives
 - C. By increasing financial investment in water infrastructure
 - D. Through private ownership of waterfront properties
- 3. How many gallons per minute are in 3.2 cubic feet per second?**
 - A. 1,436
 - B. 23.9
 - C. 25.7
 - D. 1,259
- 4. What is a watershed management plan designed to do?**
 - A. Increase land development opportunities
 - B. Protect and manage water resources
 - C. Promote urban sprawl
 - D. Enhance recreational water use
- 5. Convert 140 psi to feet of head.**
 - A. 60.6
 - B. 104.3
 - C. 323.4
 - D. 23.1
- 6. What is a primary benefit of treating domestic wastewater in sewage treatment plants?**
 - A. It increases the temperature of surface water
 - B. It prevents overflow during heavy rainfall
 - C. It enhances the nutrient load in water bodies
 - D. It helps minimize pollution entering surface waters

- 7. What natural process can negatively affect river ecosystems when groundwater is over-extracted?**
- A. Increased water flow
 - B. Decreased groundwater recharge
 - C. Improved water quality
 - D. Enhanced aquatic vegetation growth
- 8. What is an allowable exceedance in water quality standards?**
- A. A permanent increase in pollutant limits
 - B. A temporary exceedance of a pollutant limit
 - C. A significant reduction in water quality
 - D. An increase in population around the water body
- 9. What role do excess nutrients play in water quality?**
- A. They improve water clarity
 - B. They promote aquatic plant growth
 - C. They can lead to nutrient pollution
 - D. They stabilize sediments
- 10. What role does public participation play in surface water management?**
- A. Increases awareness
 - B. Offers financial support
 - C. Reduces regulatory requirements
 - D. Limits community input

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. How do phytoplankton impact surface water ecosystems?

- A. They deplete oxygen in the water.
- B. They provide food for other aquatic organisms.**
- C. They act as parasites on fish.
- D. They absorb harmful pollutants.

Phytoplankton play a crucial role in surface water ecosystems primarily by serving as a fundamental food source for a variety of aquatic organisms. These microscopic plants are the base of the aquatic food web; they convert sunlight and nutrients into organic matter through photosynthesis, which is then consumed by small zooplankton, and in turn, larger fish and marine predators. The presence of phytoplankton supports not only the growth and health of these organisms but also contributes to the overall biodiversity and stability of the ecosystem. Their ability to produce oxygen as a byproduct of photosynthesis also supports aerobic organisms, but their primary significance arises from the energy they provide to higher trophic levels in the food chain.

2. How can community involvement enhance surface water protection?

- A. By creating more recreational areas around water bodies
- B. Community events can raise awareness and foster stewardship initiatives**
- C. By increasing financial investment in water infrastructure
- D. Through private ownership of waterfront properties

Community involvement is crucial for enhancing surface water protection, and raising awareness through community events plays a significant role in this process. When communities come together for events focused on water issues, they educate participants about the importance of protecting surface water resources. This increased awareness can lead to a stronger sense of responsibility among community members, fostering stewardship initiatives that encourage individuals and groups to take action in preserving water quality and ecosystem health. Such initiatives can include activities like clean-up events, tree planting days, and educational workshops that inform the community about local water issues and how they can contribute to solutions. The collective action stemming from raised awareness is instrumental in addressing challenges such as pollution and habitat destruction, further strengthening the community's commitment to improving and protecting their water resources. Recreational areas, financial investments, and private ownership may have their benefits, but they do not necessarily empower communities in the same way that awareness and stewardship initiatives do. Engaging community members actively creates a lasting impact on surface water protection, as people who care about a cause are more likely to advocate for sustainable practices and policies.

3. How many gallons per minute are in 3.2 cubic feet per second?

- A. 1,436**
- B. 23.9
- C. 25.7
- D. 1,259

To determine how many gallons per minute are in 3.2 cubic feet per second, we need to convert cubic feet per second to gallons per minute. First, it's essential to know the conversion factors: 1 cubic foot is equivalent to approximately 7.48 gallons, and there are 60 seconds in a minute. Starting with the flow rate in cubic feet per second: 1. Convert 3.2 cubic feet to gallons: $(3.2 \text{ cubic feet}) \times 7.48 \text{ gallons/cubic foot} \approx 23.936 \text{ gallons}$ 2. Now convert this to gallons per minute: $(23.936 \text{ gallons/second}) \times 60 \text{ seconds/minute} \approx 1436.16 \text{ gallons/minute}$ Rounding this to the nearest whole number gives 1,436 gallons per minute. This matches the value of the first choice, confirming its accuracy. Understanding the conversion process and the numerical relationships between these units illustrates the depth of knowledge in fluid flow and volume calculations, which are crucial in fields related to water management and environmental science.

4. What is a watershed management plan designed to do?

- A. Increase land development opportunities
- B. Protect and manage water resources**
- C. Promote urban sprawl
- D. Enhance recreational water use

A watershed management plan is specifically designed to protect and manage water resources within a defined watershed. This involves assessing the quantity and quality of surface water and groundwater, and implementing strategies that promote sustainable use and conservation of these vital resources. The plan takes into consideration various factors such as land use, pollution sources, and the ecological health of the watershed. The primary goal of such plans is to ensure that water resources are preserved for multiple uses, including drinking water supply, recreation, and wildlife habitat, while also addressing pollution control and erosion issues. By focusing on comprehensive management practices, a watershed management plan aims to balance the needs of human communities with environmental stewardship to maintain the health and sustainability of water resources for current and future generations.

5. Convert 140 psi to feet of head.

- A. 60.6
- B. 104.3
- C. 323.4**
- D. 23.1

To convert pounds per square inch (psi) to feet of head, we can use the formula that relates these two measurements in a fluid system. The formula is: $\text{Feet of head} = \frac{\text{Pressure (psi)}}{\text{Specific Gravity of the fluid}} \times 2.31$. For water, the specific gravity is approximately 1, so we can simplify this to: $\text{Feet of head} = \text{Pressure (psi)} \times 2.31$. Given a pressure of 140 psi, the calculation would be: $140 \text{ psi} \times 2.31 \approx 323.4 \text{ feet}$. This calculation shows how a pressure in psi converts into an equivalent height in feet of water column, illustrating the relationship between pressure and the height of a fluid due to gravity. Thus, 140 psi corresponds to approximately 323.4 feet of head, making this the correct response.

6. What is a primary benefit of treating domestic wastewater in sewage treatment plants?

- A. It increases the temperature of surface water
- B. It prevents overflow during heavy rainfall
- C. It enhances the nutrient load in water bodies
- D. It helps minimize pollution entering surface waters**

Treating domestic wastewater in sewage treatment plants plays a crucial role in reducing pollution that could otherwise enter surface waters. The primary benefit is that it effectively removes harmful contaminants, pathogens, and nutrients from the wastewater before it is released back into the environment. This process helps protect aquatic ecosystems and human health by minimizing the risk of disease and maintaining water quality. By treating wastewater, the treatment plants ensure that fewer pollutants such as bacteria, heavy metals, and organic materials reach rivers, lakes, and other bodies of water, thereby contributing to cleaner and safer water systems. The reduction of pollution not only benefits the environment but also supports recreational activities and wildlife habitats.

7. What natural process can negatively affect river ecosystems when groundwater is over-extracted?

- A. Increased water flow
- B. Decreased groundwater recharge**
- C. Improved water quality
- D. Enhanced aquatic vegetation growth

When groundwater is over-extracted, it leads to decreased groundwater recharge. Groundwater recharge is the process where water from precipitation or surface water infiltrates into the ground to replenish aquifers. This process is vital for maintaining the base flow of rivers and streams, especially during dry periods. When the groundwater levels are lowered due to over-extraction, it diminishes the amount of water that seeps into rivers and streams, leading to reduced streamflow. This reduction can have several harmful effects on river ecosystems, such as lower water levels, higher water temperatures, and reduced habitat availability for aquatic species. Moreover, decreased groundwater recharge can disrupt the natural balance of the ecosystem by affecting the biodiversity and health of aquatic life. Other choices do not reflect the negative consequences associated with the over-extraction of groundwater in river ecosystems. For instance, increased water flow is typically beneficial for rivers and ecosystems, while improved water quality and enhanced aquatic vegetation growth generally suggest a healthy ecosystem. However, these can be adversely affected when the base flow is reduced, but they do not directly describe the negative impact of over-extraction itself.

8. What is an allowable exceedance in water quality standards?

- A. A permanent increase in pollutant limits
- B. A temporary exceedance of a pollutant limit**
- C. A significant reduction in water quality
- D. An increase in population around the water body

An allowable exceedance refers to a temporary exceedance of a pollutant limit established within water quality standards. This concept is important in environmental governance as it recognizes that fluctuations in water quality may occur due to various factors, such as seasonal changes, weather events, or temporary discharges that do not indicate a permanent deterioration of water quality. The idea behind this allowance is to provide flexibility in managing water bodies under normal variations, while still ensuring that the overall health of the ecosystem is protected. Regulatory bodies often define specific circumstances under which exceedances can be tolerated, ensuring that they do not result in long-term harm to aquatic life or drinking water sources. Understanding this concept allows for the proper interpretation of water quality data and management practices. Temporary exceedances are monitored closely, and actions may be taken to resolve any issues that lead to them. The other options do not align with the definition of allowable exceedance, as they suggest permanent changes or significant deterioration that would not fall under this specific classification.

9. What role do excess nutrients play in water quality?

- A. They improve water clarity
- B. They promote aquatic plant growth
- C. They can lead to nutrient pollution**
- D. They stabilize sediments

Excess nutrients play a significant role in water quality by leading to nutrient pollution. When an excess of nutrients, particularly nitrogen and phosphorus, enters water bodies—often from sources such as agricultural runoff, wastewater discharge, or nutrient-rich fertilizers—it can cause an overgrowth of algae, known as algal blooms. These blooms can deplete oxygen levels in the water, leading to hypoxic conditions that harm aquatic life. As the algae die off and decompose, further oxygen depletion occurs, which can have devastating impacts on fish and other organisms. Additionally, some algal blooms produce toxins that can be harmful to both aquatic ecosystems and human health. Therefore, recognizing how excess nutrients contribute to nutrient pollution is crucial in understanding water quality issues and their management.

10. What role does public participation play in surface water management?

- A. Increases awareness**
- B. Offers financial support
- C. Reduces regulatory requirements
- D. Limits community input

Public participation plays a crucial role in surface water management by increasing community awareness regarding water issues and the importance of protecting water resources. When community members are engaged in the decision-making process, they become more informed about local water quality concerns, the impact of various activities on waterways, and the necessity for sustainable practices. Increased awareness can lead to more community involvement in conservation efforts and promote educational initiatives that encourage responsible water use and pollution prevention. Engaging the public also helps to build a sense of ownership and responsibility toward local water bodies. This results in more advocacy for policies aimed at sustainable water management, along with greater support for conservation measures that benefit the entire ecosystem. By fostering a well-informed community, surface water management strategies can be more effectively implemented and supported, leading to healthier water resources.

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://ncsurfacewatermath.examzify.com>

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

SAMPLE