

NEHA WASTEWATER 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.

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 is the purpose of a rotating biological contactor (RBC) in wastewater treatment?**
 - A. Remove heavy metals
 - B. Provide surface area for microbial growth and aeration
 - C. Filter out small solids
 - D. Regulate nutrient levels
- 2. What is a biological nutrient removal (BNR) system designed to do?**
 - A. Reduce the volume of wastewater
 - B. Remove nitrogen and phosphorus through biological processes
 - C. Enhance the chemical composition of wastewater
 - D. Control odor emissions in treatment facilities
- 3. During which treatment stage are solids primarily removed?**
 - A. Secondary treatment
 - B. Tertiary treatment
 - C. Primary treatment
 - D. Quaternary treatment
- 4. Which method is least likely to be used for treating high-strength industrial wastewater?**
 - A. Biological treatment
 - B. Physical treatment
 - C. Land application
 - D. Chemical treatment
- 5. What distinguishes primary treatment from secondary treatment in wastewater management?**
 - A. Primary treatment focuses on biological processes
 - B. Secondary treatment removes solids while primary does not
 - C. Primary treatment removes solids, secondary reduces organic matter
 - D. Both treatments focus on disinfection of effluent

6. Which common indicator is used to measure organic pollution in water?

- A. pH value
- B. Turbidity levels
- C. Biochemical Oxygen Demand (BOD)
- D. Coliform bacteria counts

7. What is the purpose of dewatering in sludge management?

- A. To increase the volume of sludge for disposal
- B. To remove excess water from sludge
- C. To accelerate the breakdown of organic materials
- D. To neutralize hazardous materials

8. What happens when a combined sewer system exceeds its capacity?

- A. It automatically shuts down
- B. It discharges untreated wastewater
- C. It reroutes water to treatment facilities
- D. It increases the efficiency of treatment

9. What does the term "eutrophication" refer to?

- A. The excessive growth of algae in water bodies due to nutrient overload, primarily nitrogen and phosphorus
- B. The process of filtering wastewater through physical barriers
- C. The breakdown of organic matter by microorganisms
- D. The recovery of energy from wastewater treatment

10. What does BOD measure in wastewater?

- A. The total suspended solids
- B. The concentration of nitrates
- C. The amount of dissolved oxygen required in aerobic bacterial decomposition
- D. The pH level of the wastewater

Answers

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

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Explanations

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1. What is the purpose of a rotating biological contactor (RBC) in wastewater treatment?

- A. Remove heavy metals
- B. Provide surface area for microbial growth and aeration**
- C. Filter out small solids
- D. Regulate nutrient levels

The purpose of a rotating biological contactor (RBC) in wastewater treatment is to provide surface area for microbial growth and aeration. RBCs consist of a series of closely spaced discs that are partially submerged in wastewater. As these discs rotate, microorganisms attached to the surface of the discs come into contact with the wastewater, where they break down organic matter. This design maximizes the exposure of the biofilm to both the wastewater and the air, allowing for efficient nutrient uptake and aerobic digestion of pollutants. The rotation helps ensure the biofilm is adequately aerated and periodically exposed and submerged in the wastewater, enhancing the overall treatment process. The effective combination of microbial growth and aeration is key to the RBC's function in treating wastewater. Other options do not accurately represent the primary purpose of an RBC. While the device may assist indirectly in some of these functions, such as the potential to impact nutrient levels or assist in removing certain contaminants, its main role is centered on providing a platform for microbial communities to thrive and facilitate aerobic treatment.

2. What is a biological nutrient removal (BNR) system designed to do?

- A. Reduce the volume of wastewater
- B. Remove nitrogen and phosphorus through biological processes**
- C. Enhance the chemical composition of wastewater
- D. Control odor emissions in treatment facilities

A biological nutrient removal (BNR) system is specifically designed to remove nutrient pollutants, particularly nitrogen and phosphorus, from wastewater through biological processes. This is critical because excessive nitrogen and phosphorus in water bodies can lead to eutrophication, which results in algal blooms, depletion of oxygen in the water, and harm to aquatic life. BNR typically employs a combination of anaerobic, anoxic, and aerobic conditions to facilitate the growth of specific microorganisms that effectively metabolize these nutrients. During the anaerobic phase, certain bacteria can take up organic matter and release phosphorus, while in the aerobic phase, nitrogen is converted to a gaseous state (often as nitrogen gas) that is released into the atmosphere. This comprehensive biological approach not only helps in nutrient removal but also promotes the sustainability of wastewater treatment by minimizing reliance on chemical additives. The other options do not accurately describe the primary function of a BNR system. Reducing the volume of wastewater, while a potential outcome of efficient treatment processes, is not the main objective of BNR. Enhancing the chemical composition does not pertain to the nutrient removal focuses of BNR systems, and controlling odor emissions in treatment facilities, while important, falls within the realm of different treatment technologies rather than the biological nutrient

3. During which treatment stage are solids primarily removed?

- A. Secondary treatment
- B. Tertiary treatment
- C. Primary treatment**
- D. Quaternary treatment

The correct choice indicates that solids are primarily removed during the primary treatment stage of wastewater treatment. This initial phase is crucial for reducing the overall solid content in the wastewater before it undergoes further treatment processes. Primary treatment primarily involves physical processes such as sedimentation, where larger solids settle at the bottom of settling tanks, forming sludge. Additionally, some floating materials, like oils and grease, are skimmed off the surface. This stage effectively removes a significant portion of suspended solids and organic matter, thereby reducing the load on subsequent treatment stages, which focus more on biological and chemical remediation. Understanding the role of primary treatment in solid removal is essential, as it lays the groundwork for the efficiency and effectiveness of the entire wastewater treatment process.

4. Which method is least likely to be used for treating high-strength industrial wastewater?

- A. Biological treatment
- B. Physical treatment
- C. Land application**
- D. Chemical treatment

Land application is the method least likely to be used for treating high-strength industrial wastewater due to several important factors. High-strength industrial wastewater typically contains elevated concentrations of pollutants, including organic compounds, heavy metals, and toxins, that may exceed the capacity of soil and groundwater to naturally absorb and treat these contaminants. Land application generally relies on the natural processes of soil microorganisms and vegetation to treat wastewater, which may not be effective in managing the high levels of pollution found in such wastewater types. Additionally, there are regulatory and environmental concerns associated with contaminating land and potentially impacting nearby water sources or ecosystems. In contrast, biological treatment, chemical treatment, and physical treatment are more commonly employed methods for high-strength wastewater. Biological treatment utilizes microorganisms to breakdown organic material, making it effective for organic-rich waste; chemical treatment involves adding chemicals to neutralize or precipitate harmful substances; and physical treatment, which may include processes such as filtration and sedimentation, can be used to remove solids and particulates efficiently. This inherent limitation of land application in handling the complex composition and high pollutant load of industrial wastewater makes it less feasible compared to the other treatment methods.

5. What distinguishes primary treatment from secondary treatment in wastewater management?

- A. Primary treatment focuses on biological processes
- B. Secondary treatment removes solids while primary does not
- C. Primary treatment removes solids, secondary reduces organic matter**
- D. Both treatments focus on disinfection of effluent

Primary treatment and secondary treatment are fundamental stages in wastewater management, each serving distinct purposes. Primary treatment is primarily focused on the physical removal of solids from wastewater. This involves processes such as sedimentation, where heavier solids settle to the bottom of a treatment tank, and flotation, where lighter materials rise to the surface. The objective of this stage is to reduce the total suspended solids and organic material that can be easily removed mechanically. Secondary treatment, on the other hand, is centered around biological processes that target the reduction of organic matter and dissolved solids. This stage typically employs microorganisms to break down organic pollutants, effectively reducing the biochemical oxygen demand (BOD) of the effluent. This is crucial for improving water quality before discharge or further treatment. Thus, the distinction lies in that primary treatment focuses on solids removal, while secondary treatment aims to reduce organic matter using biological processes. Understanding this differentiation is vital for individuals involved in wastewater management, as it underlines the importance of each treatment stage in the overall objective of safe and effective wastewater disposal.

6. Which common indicator is used to measure organic pollution in water?

- A. pH value
- B. Turbidity levels
- C. Biochemical Oxygen Demand (BOD)**
- D. Coliform bacteria counts

The measurement of organic pollution in water is effectively indicated by Biochemical Oxygen Demand (BOD). BOD assesses the amount of oxygen that bacteria will consume while decomposing organic matter in a water sample over a specified period, usually five days at a controlled temperature. When organic pollutants are present, they lead to increased oxygen consumption, thus resulting in higher BOD values. A high BOD indicates significant organic pollution, which can deplete dissolved oxygen levels in water, harming aquatic life. In contrast, options like pH value indicate the acidity or alkalinity of the water but do not specifically measure organic pollution. Turbidity levels measure the cloudiness or clarity of water, affected by suspended particles, but do not directly relate to organic content. Lastly, while coliform bacteria counts assess the presence of potentially harmful microorganisms and indicate fecal contamination, they do not directly measure organic pollution. Therefore, BOD is the most relevant indicator of organic pollution among the provided choices.

7. What is the purpose of dewatering in sludge management?

- A. To increase the volume of sludge for disposal
- B. To remove excess water from sludge**
- C. To accelerate the breakdown of organic materials
- D. To neutralize hazardous materials

The primary purpose of dewatering in sludge management is to remove excess water from sludge. Dewatering is an essential step in the treatment and disposal of wastewater sludge, as it reduces the water content significantly, leading to a more manageable and less voluminous material. By decreasing the volume of water, dewatering makes it easier and more economical to transport and dispose of the sludge. Additionally, lower moisture content results in a reduced weight, which can save on disposal costs and allow for more efficient handling of the sludge. This aspect is crucial in wastewater treatment facilities, where managing large quantities of sludge is a significant operational challenge. Overall, dewatering plays a crucial role in optimizing sludge processing and facilitating subsequent treatment or disposal options.

8. What happens when a combined sewer system exceeds its capacity?

- A. It automatically shuts down
- B. It discharges untreated wastewater**
- C. It reroutes water to treatment facilities
- D. It increases the efficiency of treatment

When a combined sewer system exceeds its capacity, it usually results in discharging untreated wastewater into nearby water bodies. This situation occurs during heavy rainstorms or snowmelt when the volume of stormwater and sewage surpasses the system's capacity to manage both. As the system becomes overwhelmed, the excess water is often released through designated overflow structures known as Combined Sewer Overflows (CSOs) to prevent backups and potential flooding in urban areas. This practice, while necessary to maintain system functionality and prevent local flooding, poses significant environmental and health risks because the untreated wastewater can contain pathogens, nutrients, and pollutants that adversely affect water quality and aquatic life. Consequently, managing and mitigating these CSO events is crucial for public health and environmental protection.

9. What does the term "eutrophication" refer to?

- A. The excessive growth of algae in water bodies due to nutrient overload, primarily nitrogen and phosphorus**
- B. The process of filtering wastewater through physical barriers
- C. The breakdown of organic matter by microorganisms
- D. The recovery of energy from wastewater treatment

The term "eutrophication" refers specifically to the excessive growth of algae in water bodies caused by an overload of nutrients, mainly nitrogen and phosphorus. This process often occurs due to agricultural runoff, wastewater discharges, or other human activities that introduce these nutrients into aquatic systems. Eutrophication can lead to harmful algal blooms that can deplete oxygen in the water, leading to dead zones where aquatic life cannot survive. It disrupts ecosystems, affects water quality, and can create health hazards for humans and wildlife. Understanding this concept is essential for environmental management and wastewater treatment practices, as it highlights the importance of controlling nutrient inputs into water bodies to maintain ecological balance. The other options listed do not capture the essence of eutrophication, which specifically centers around nutrient-induced algal growth rather than physical treatment processes or energy recovery.

10. What does BOD measure in wastewater?

- A. The total suspended solids
- B. The concentration of nitrates
- C. The amount of dissolved oxygen required in aerobic bacterial decomposition
- D. The pH level of the wastewater

BOD, or Biochemical Oxygen Demand, measures the amount of dissolved oxygen that aerobic bacteria will require to decompose organic matter in a given sample of wastewater. This parameter is critical for assessing the organic pollution level in the water, as it provides insight into the potential impact of wastewater on the aquatic environment. High BOD values indicate a significant presence of organic matter that can consume oxygen, which is essential for the survival of aquatic life. In the context of wastewater treatment, understanding BOD is vital for designing treatment processes that effectively reduce organic load before the effluent is discharged into the environment, ensuring that the remaining dissolved oxygen is sufficient to support aquatic organisms. Hence, the measurement focuses specifically on oxygen demand, reflecting the health and quality of the water. Other choices, such as total suspended solids, concentration of nitrates, and pH level, relate to different characteristics of wastewater but do not provide the same insight into the oxygen requirements of microbial decomposition, making them less relevant to the concept of BOD.

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://nehawastewater.examzify.com>

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

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