

# Wastewater New York State Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

**This is a sample study guide. To access the full version with hundreds of 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. Don't worry about getting everything right, 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, and take breaks to retain information better.**

## **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.**

## **7. Use Other Tools**

**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**

- 1. How does maintaining a standard three-phase, single speed, synchronous AC motor compare to a variable-speed AC motor?**
  - A. The single speed motor requires more maintenance**
  - B. The single speed motor does not need attention to slip rings and carbon brushes**
  - C. The variable speed motor is less complicated to maintain**
  - D. Both motors need equivalent care and maintenance**
- 2. What is the main cause of most odors in wastewater systems?**
  - A. Ammonia**
  - B. Hydrogen sulfide**
  - C. Carbon dioxide**
  - D. Chlorine**
- 3. What is a benefit of using brass tools in anaerobic digester maintenance?**
  - A. Higher resistance to corrosion**
  - B. Lightweight for easier handling**
  - C. Cost-effective for large-scale operations**
  - D. Availability in various shapes**
- 4. What is nitrification best described as?**
  - A. Organic matter being converted to carbon dioxide**
  - B. Ammonia is converted to nitrites and nitrates**
  - C. Reduction of nitrates to nitrogen gas**
  - D. Breakdown of proteins by enzymes**
- 5. How is the common practice of tailgate safety best described?**
  - A. A formal safety training seminar**
  - B. Regular meetings with management about safety policies**
  - C. Short reminders and conversations with employees about safety**
  - D. Written reports on workplace accidents**



- 6. What type of samples should be taken for microscopic examination from an aeration tank?**
- A. Composite samples**
  - B. Grab samples**
  - C. Settled samples**
  - D. Continuous flow samples**
- 7. What publication contains all proposed and finalized federal regulations, including safety regulations?**
- A. Federal Register**
  - B. Code of Federal Regulations**
  - C. Environmental Handbook**
  - D. National Guidelines**
- 8. What is the typical range of suspended solids in domestic influent wastewater?**
- A. 50-150 mg/L**
  - B. 100-300 mg/L**
  - C. 300-500 mg/L**
  - D. 500-700 mg/L**
- 9. Why are horizontal pipes holding air diffusers at the same elevation in an aeration tank?**
- A. To provide uniform air delivery across the tank**
  - B. To facilitate easy maintenance access**
  - C. To minimize the risk of pressure build-up**
  - D. To enhance oxygen levels only on the surface**
- 10. What charge does an anionic polymer possess?**
- A. Neutral charge**
  - B. Positive charge**
  - C. Negative charge**
  - D. Variable charge**

## **Answers**

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

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## **Explanations**

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**1. How does maintaining a standard three-phase, single speed, synchronous AC motor compare to a variable-speed AC motor?**

**A. The single speed motor requires more maintenance**

**B. The single speed motor does not need attention to slip rings and carbon brushes**

**C. The variable speed motor is less complicated to maintain**

**D. Both motors need equivalent care and maintenance**

Maintaining a standard three-phase, single-speed, synchronous AC motor is often considered easier in terms of certain maintenance aspects compared to a variable-speed AC motor. Synchronous motors typically do not utilize slip rings or carbon brushes, unlike some types of variable-speed motors, particularly those employing certain types of drives like DC motors or induction motors with slip. The absence of these components in a synchronous AC motor means that there are fewer parts that require regular wear and replacement, thus reducing maintenance complexity and frequency. In contrast, variable-speed motors may have more intricate control systems, which can introduce additional maintenance needs, including the monitoring and adjustment of electronic components or control systems. Therefore, the statement that the single-speed motor does not need attention to slip rings and carbon brushes highlights its relative simplicity and lower maintenance requirements because these features are significant maintenance concerns for motors that employ them.

**2. What is the main cause of most odors in wastewater systems?**

**A. Ammonia**

**B. Hydrogen sulfide**

**C. Carbon dioxide**

**D. Chlorine**

The primary cause of most odors in wastewater systems is hydrogen sulfide. This gas is produced during the decomposition of organic matter in anaerobic conditions, which are commonly found in wastewater treatment facilities and sewer systems. Hydrogen sulfide is notorious for its characteristic rotten egg smell and can be detected even at very low concentrations. While ammonia, carbon dioxide, and chlorine can contribute to odors in various ways, hydrogen sulfide is often the most dominant and identifiable odor associated with untreated or poorly treated wastewater. Its presence not only poses a nuisance due to its smell but can also indicate issues with wastewater management, such as insufficient aeration or the need for better sludge handling practices. Understanding the sources and management of hydrogen sulfide is crucial for effective odor control in wastewater systems.

**3. What is a benefit of using brass tools in anaerobic digester maintenance?**

- A. Higher resistance to corrosion**
- B. Lightweight for easier handling**
- C. Cost-effective for large-scale operations**
- D. Availability in various shapes**

Using brass tools in anaerobic digester maintenance offers a notable benefit due to their higher resistance to corrosion. This is particularly important in anaerobic environments, where tools are often exposed to various chemicals and a moist atmosphere that can lead to rapid deterioration of less resistant materials. Brass, an alloy of copper and zinc, exhibits strong anti-corrosive properties, making it more durable and reliable for extended use in such harsh conditions. This not only ensures that the tools maintain their integrity over time, but also reduces maintenance costs and downtime associated with replacing corroded or damaged tools. The other options, while they may have their individual merits, do not address the critical need for durability and corrosion resistance in the specific context of anaerobic digesters.

**4. What is nitrification best described as?**

- A. Organic matter being converted to carbon dioxide**
- B. Ammonia is converted to nitrites and nitrates**
- C. Reduction of nitrates to nitrogen gas**
- D. Breakdown of proteins by enzymes**

Nitrification is best described as the process where ammonia is converted to nitrites and then to nitrates. This biological transformation is carried out by beneficial bacteria in aerobic conditions. The process plays a crucial role in the nitrogen cycle, helping to convert nitrogen in organic matter into forms that plants can easily absorb. In the first step, ammonia, which can be toxic at high concentrations, is oxidized to nitrites by bacteria such as *Nitrosomonas*. Following this, another group of bacteria, including *Nitrobacter*, further oxidizes nitrites to nitrates. This sequential process is essential for maintaining healthy aquatic ecosystems and soil fertility, and it minimizes the risk of ammonia pollution in wastewater. Understanding nitrification is vital for wastewater treatment processes, where it contributes to the removal of ammonia from effluents before they are released into the environment.

5. How is the common practice of tailgate safety best described?
- A. A formal safety training seminar
  - B. Regular meetings with management about safety policies
  - C. Short reminders and conversations with employees about safety**
  - D. Written reports on workplace accidents

The common practice of tailgate safety is best described as short reminders and conversations with employees about safety. This approach allows for immediate and flexible safety discussions that can occur in a casual setting, typically before the beginning of a job or shift. Tailgate safety meetings focus on specific safety issues that may arise in the day's work, making them relevant and practical for employees. This informal format encourages participation from team members, allowing them to voice concerns and share experiences related to safety hazards they may encounter. The goal is to promote awareness and create a culture of safety through ongoing, informal engagement. Regularly revisiting safety topics in this manner reinforces their importance and helps ensure that safety practices are understood and implemented throughout the workday.

6. What type of samples should be taken for microscopic examination from an aeration tank?
- A. Composite samples
  - B. Grab samples**
  - C. Settled samples
  - D. Continuous flow samples

For microscopic examination from an aeration tank, grab samples are the most appropriate choice because they provide a snapshot of the mixed liquor at a specific moment. This allows for an accurate analysis of the microorganisms present in the aeration tank at that particular time, which is essential for monitoring the health and functioning of the biological treatment process. Grab samples offer the advantage of capturing the variability in microbial populations that can occur throughout the day, particularly in systems where conditions may fluctuate due to changes in inflow or operational parameters. This method can effectively reflect the overall activity and distribution of microorganisms, such as bacteria and protozoa, which are crucial for the treatment of wastewater. Other sampling methods, such as composite samples, which average out the constituents over a period, may dilute specific populations that could be critical for understanding the system's performance at any given time. Settled samples primarily contain settled solids and may not represent the active biomass effectively. Continuous flow samples are generally used for process monitoring or chemical analysis rather than microbial assessment, making grab samples the most suitable choice in this context.

**7. What publication contains all proposed and finalized federal regulations, including safety regulations?**

**A. Federal Register**

**B. Code of Federal Regulations**

**C. Environmental Handbook**

**D. National Guidelines**

The publication that contains all proposed and finalized federal regulations, including safety regulations, is the Code of Federal Regulations (CFR). The CFR is a comprehensive collection of the regulations enforced by federal agencies. It organizes regulations by subject matter, allowing users to easily find applicable rules concerning various areas, including environmental safety and health. As regulations are finalized, they are compiled into the CFR, making it the authoritative source for federal regulatory requirements. While the Federal Register serves as a daily journal of the U.S. government that publishes proposed rules, final rules, and notices, it does not compile all regulations in an organized format as the CFR does. The Environmental Handbook and National Guidelines do not encompass all federal regulations but may pertain to specific topics or provide supplementary information within certain contexts. Therefore, the Code of Federal Regulations is the correct choice as it serves as the definitive reference for understanding federal regulations.

**8. What is the typical range of suspended solids in domestic influent wastewater?**

**A. 50-150 mg/L**

**B. 100-300 mg/L**

**C. 300-500 mg/L**

**D. 500-700 mg/L**

The typical range of suspended solids in domestic influent wastewater is primarily found between 100 and 300 mg/L. This range is representative of the concentration of solid particles suspended in wastewater that originates from residential sources. Domestic wastewater usually contains a mixture of organic and inorganic particulate matter, which can include food waste, paper, and other materials. Knowing this typical range is essential for wastewater treatment professionals as it helps them design and operate treatment systems effectively. High levels of suspended solids can lead to operational challenges in treatment processes because they can hinder the efficiency of sedimentation and filtration systems. Understanding these concentrations aids in predicting treatment requirements and the potential impact on the receiving water environment after discharge. This information also aligns with regulatory requirements for effluent quality, making it crucial in the context of wastewater management.



**9. Why are horizontal pipes holding air diffusers at the same elevation in an aeration tank?**

- A. To provide uniform air delivery across the tank**
- B. To facilitate easy maintenance access**
- C. To minimize the risk of pressure build-up**
- D. To enhance oxygen levels only on the surface**

The reason horizontal pipes holding air diffusers in an aeration tank are maintained at the same elevation is to provide uniform air delivery across the tank. Consistent elevation helps ensure that the diffusers distribute air evenly throughout the tank, which is crucial for effective aeration. When air is delivered uniformly, it promotes consistent mixing and oxygen transfer, allowing for optimal biological activity and treatment efficiency within the wastewater system. Uniform air delivery minimizes dead zones where air may not penetrate effectively, ensuring that all areas of the tank receive adequate aeration. This is particularly important in wastewater treatment processes, where the goal is to facilitate the growth of microorganisms that help break down organic material. By keeping the diffusers at the same elevation, operators can maximize the overall performance of the aeration system, leading to better treatment outcomes. In contrast, other options do not directly address the primary function of maintaining the diffusers at the same elevation. For example, while easy maintenance access is important, it is not the primary reason for the design. Similarly, minimizing pressure build-up plays a role in the overall system design but is not specifically a function of diffuser elevation. Enhancing oxygen levels only at the surface does not align with the objective of providing uniform aeration throughout the entire tank.

**10. What charge does an anionic polymer possess?**

- A. Neutral charge**
- B. Positive charge**
- C. Negative charge**
- D. Variable charge**

An anionic polymer possesses a negative charge due to the presence of functional groups in its structure that can donate electrons. These functional groups, such as carboxylate, sulfate, or phosphonate groups, dissociate in solution, leading to the overall negative charge of the polymer. Anionic polymers are often utilized in various applications, such as wastewater treatment, where they aid in flocculation and clarification processes. Their negative charge allows them to attract and bind with positively charged particles (such as coagulants or charged impurities), thus facilitating the removal of unwanted materials from wastewater. In summary, the defining characteristic of an anionic polymer is its ability to carry a negative charge, making it effective in treatments where there is a need to interact with positively charged contaminants.

## 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:**

**<https://newyorkstate-wastewater.examzify.com>**

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