

Texas Class C Wastewater Treatment License Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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	16

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

- 1. What must all anaerobic digester roofs/covers be equipped with?**
 - A. Pressure relief valves**
 - B. Vacuum relief valves and flame-trap valves**
 - C. Only flame-trap valves**
 - D. None of the above**
- 2. What type of solids cannot be processed on a trickling filter?**
 - A. Settled Solids**
 - B. Organic Solids**
 - C. Large Suspended Solids**
 - D. Floating Solids**
- 3. Which of the following is a common parameter evaluated during primary settling operation?**
 - A. BOD levels**
 - B. Nitrogen content**
 - C. pH levels**
 - D. Settleable solids**
- 4. What factor most significantly affects the drying time of sludge?**
 - A. Amount of rainfall**
 - B. Degree of digestion**
 - C. Temperature of the drying bed**
 - D. Type of sludge**
- 5. What is the maximum organic loading on wastewater stabilization ponds as recommended?**
 - A. 20 lb. BOD/acre/day**
 - B. 35 lb. BOD/acre/day**
 - C. 50 lb. BOD/acre/day**
 - D. 65 lb. BOD/acre/day**

- 6. Which of the following is also an oxidizing agent used in wastewater treatment?**
- A. Ozone (O₃)**
 - B. Iron chloride**
 - C. Potassium permanganate**
 - D. Aluminum sulfate**
- 7. What do methane bacteria convert primary volatile acids into?**
- A. Nitrogen and carbon monoxide**
 - B. Water and oxygen**
 - C. Methane and carbon dioxide**
 - D. Sulfur and hydrogen sulfide**
- 8. What can laboratory tests on an anaerobic digester determine?**
- A. Temperature and pressure levels**
 - B. Digester loading and sludge quality**
 - C. pH and alkalinity readings**
 - D. Flow rates and settling times**
- 9. A conventional activated sludge process can remove what percent of the organic load in primary clarifiers?**
- A. 10-20%**
 - B. 30-40%**
 - C. 50-60%**
 - D. 70-80%**
- 10. What may be a sign of inadequate digestion in a wastewater treatment plant?**
- A. Low CO₂ levels**
 - B. Excessive plant growth**
 - C. Rapid sludge settling**
 - D. High volumes of odor**

Answers

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

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Explanations

1. What must all anaerobic digester roofs/covers be equipped with?

- A. Pressure relief valves**
- B. Vacuum relief valves and flame-trap valves**
- C. Only flame-trap valves**
- D. None of the above**

Anaerobic digester roofs or covers are integral components of the wastewater treatment process, designed to handle gas produced during digestion processes, which can include methane—a highly flammable gas. Therefore, it is essential that these structures are equipped with mechanisms that can safely manage both pressure and vacuum to prevent structural damage or release of gases into the atmosphere. The inclusion of vacuum relief valves is crucial because as organic matter breaks down in the absence of oxygen, it produces gas that can create pressure within the digester. If this pressure is not adequately managed, it can lead to dangerous conditions, including structural failure of the digester cover. On the other hand, flame-trap valves serve as safety devices that prevent the ignition of flammable gases within the system while still allowing for the safe passage or release of those gases. Hence, equipping anaerobic digester roofs with vacuum relief valves and flame-trap valves ensures that the system operates safely and effectively—managing both the build-up of gas pressure and preventing exterior flames from igniting the gas inside the digester. This combined safety protocol is necessary for the safe operation of anaerobic digestion processes in wastewater treatment facilities.

2. What type of solids cannot be processed on a trickling filter?

- A. Settled Solids**
- B. Organic Solids**
- C. Large Suspended Solids**
- D. Floating Solids**

In a trickling filter system, the design and operation involve a fixed bed of media where microorganisms grow and consume organic matter in wastewater as it percolates through the media. One of the key characteristics of trickling filters is their ability to efficiently process wastewater with a relatively low solids loading. Large suspended solids are problematic for trickling filters because they can clog the media and disrupt the flow of effluent, leading to reduced efficiency or failure of the filter. These large particles can create blockages that inhibit the necessary contact between the wastewater and the bacterial biofilm that forms on the filter media. Hence, processing large suspended solids is not suitable in this type of treatment system. In contrast, settled solids, organic solids, and floating solids can often be managed in different ways within the wastewater treatment process, such as through sedimentation or skimming. However, large suspended solids need to be removed prior to treatment in a trickling filter to maintain the efficiency and effectiveness of the system.

3. Which of the following is a common parameter evaluated during primary settling operation?

- A. BOD levels**
- B. Nitrogen content**
- C. pH levels**
- D. Settleable solids**

During primary settling operations in wastewater treatment, one of the primary parameters evaluated is the amount of settleable solids. This involves measuring the solids that will settle out from the wastewater under the influence of gravity in a sedimentation tank or clarifier. The purpose of primary settling is to remove a significant fraction of suspended solids and organic matter from the wastewater, allowing for clearer effluent that can undergo further treatment. Settleable solids are crucial for assessing the efficiency of this process, as higher levels indicate successful separation and removal of solid wastes from the liquid phase. Measuring the volume of solids that settle out over time helps determine how well the primary settling stage is functioning and if any adjustments to the process may be necessary. Understanding this parameter allows operators to make informed decisions regarding the treatment process, ensuring that the system operates efficiently and effectively.

4. What factor most significantly affects the drying time of sludge?

- A. Amount of rainfall**
- B. Degree of digestion**
- C. Temperature of the drying bed**
- D. Type of sludge**

The drying time of sludge is significantly influenced by the degree of digestion because the digestion process reduces the moisture content and changes the physical and chemical properties of the sludge. During anaerobic or aerobic digestion, organic matter is broken down, which results in a stabilization of the material. This stabilization either leads to a reduction in the volume of sludge that remains after digestion or alters its texture, making it easier to dry. When sludge has undergone sufficient digestion, it contains less water and more solid constituents, which allows for a faster drying process. Conversely, poorly digested or raw sludge retains a higher water content and may take longer to dry, as the moisture must be evaporated from a denser and more complex matrix of organic materials. While other factors such as temperature, type of sludge, and environmental conditions like rainfall may play a role in the overall drying process, the degree of digestion is the most critical factor determining how much moisture is present and thus how quickly drying can occur.

5. What is the maximum organic loading on wastewater stabilization ponds as recommended?

- A. 20 lb. BOD/acre/day**
- B. 35 lb. BOD/acre/day**
- C. 50 lb. BOD/acre/day**
- D. 65 lb. BOD/acre/day**

The recommended maximum organic loading for wastewater stabilization ponds is 35 lb. BOD/acre/day. This figure is important because it serves as a guideline for the design and operation of stabilization ponds, ensuring that the ponds can effectively treat the incoming organic waste without becoming overloaded. When organic loading exceeds the recommended limits, it can lead to insufficient treatment, creating poor water quality and potentially harming the aquatic ecosystem. Stabilization ponds rely on natural processes involving microorganisms to break down organic matter. If the loading is too high, these microorganisms may not be able to effectively metabolize the waste, leading to issues such as odors, surface scums, and even the potential for harmful algae blooms. The 35 lb. BOD/acre/day standard takes into account various factors, such as the size of the pond, the climate, and the characteristics of the influent wastewater. Monitoring and maintaining organic loading within recommended limits is a critical aspect of managing wastewater treatment systems to ensure they operate efficiently and meet regulatory standards.

6. Which of the following is also an oxidizing agent used in wastewater treatment?

- A. Ozone (O₃)**
- B. Iron chloride**
- C. Potassium permanganate**
- D. Aluminum sulfate**

Ozone (O₃) serves as an effective oxidizing agent in wastewater treatment due to its strong oxidation properties. It is commonly used to disinfect water and remove pollutants, including organic compounds and pathogens. Ozone reacts with contaminants, leading to their breakdown and rendering them less harmful or completely harmless. This process is crucial in improving water quality and making it suitable for discharge or reuse. In the context of wastewater treatment, ozone is particularly valued for its ability to achieve a high level of disinfection and its rapid decomposition back into oxygen, leaving no residual byproducts in the treated water. Its application can lead to better treatment outcomes when pollutants are present that are resistant to traditional disinfection methods. Other substances, such as iron chloride, potassium permanganate, and aluminum sulfate, serve different roles in wastewater treatment. For instance, iron chloride is primarily used as a coagulant to help remove suspended solids, while potassium permanganate can also act as an oxidizing agent, but it is not as prominent as ozone in this specific context. Aluminum sulfate is mainly used for coagulation and flocculation processes rather than direct oxidation. Thus, ozone stands out as a well-recognized oxidizing agent in wastewater treatment applications, making it the correct

7. What do methane bacteria convert primary volatile acids into?

- A. Nitrogen and carbon monoxide**
- B. Water and oxygen**
- C. Methane and carbon dioxide**
- D. Sulfur and hydrogen sulfide**

Methane bacteria, also known as methanogens, play a crucial role in the anaerobic digestion process, particularly in the breakdown of organic matter in wastewater treatment. They specifically target primary volatile fatty acids produced during the decomposition of organic materials. The conversion carried out by these bacteria results in the formation of methane and carbon dioxide. Methane, a key biogas component, is important for energy production and can be harnessed as a renewable energy source. Carbon dioxide, while not as energy-rich, is also produced during this metabolic process. This transformation is a vital step in the overall anaerobic digestion process, helping to stabilize organic waste and reduce its volume. Understanding the role of methane bacteria is essential for effective wastewater treatment operations, as it underscores the importance of maintaining appropriate conditions for their activity to enhance biogas production and improve the efficiency of the treatment process.

8. What can laboratory tests on an anaerobic digester determine?

- A. Temperature and pressure levels**
- B. Digester loading and sludge quality**
- C. pH and alkalinity readings**
- D. Flow rates and settling times**

Laboratory tests on an anaerobic digester can provide critical information regarding digester loading and sludge quality. The process of anaerobic digestion involves breaking down organic matter in the absence of oxygen, which produces biogas and reduces the volume of waste. Digester loading refers to the amount of organic material being added to the digester, which directly affects its operational efficiency. By analyzing the sludge quality, operators can determine how well the digestion process is functioning, which is essential for optimizing the digestion process, maximizing biogas production, and ensuring the stability of the system. In contrast, while temperature and pressure levels, pH and alkalinity readings, and flow rates and settling times are all important parameters in wastewater treatment and can be analyzed in various contexts, the specific focus of laboratory tests in relation to an anaerobic digester is primarily on the loading of materials and the characteristics of the sludge. Understanding these factors helps operators make informed decisions about the management and operational adjustments required for the digester to perform effectively.

9. A conventional activated sludge process can remove what percent of the organic load in primary clarifiers?

- A. 10-20%**
- B. 30-40%**
- C. 50-60%**
- D. 70-80%**

In a conventional activated sludge process, primary clarifiers are designed to settle out a significant portion of suspended solids and organic material present in the wastewater before it enters the biological treatment phase. This treatment system typically removes approximately 30-40% of the organic load. The primary clarifiers function effectively by allowing heavier solids to settle to the bottom while lighter materials float to the surface, where they can be removed. This leaves more manageable organic material for subsequent biological treatment processes, where microorganisms can be activated to further break down the remaining organic matter. Selecting the range of 30-40% is consistent with typical performance metrics for primary clarifiers in conventional systems, ensuring that the wastewater is adequately pre-treated before further biological processing. Understanding this percentage is crucial for operators to evaluate the efficiency of the treatment process and to ensure compliance with regulatory standards for effluent quality.

10. What may be a sign of inadequate digestion in a wastewater treatment plant?

- A. Low CO₂ levels**
- B. Excessive plant growth**
- C. Rapid sludge settling**
- D. High volumes of odor**

The presence of high volumes of odor is a significant indicator of inadequate digestion in a wastewater treatment plant. During the digestion process, organic materials are broken down by microorganisms, which typically leads to the production of gases such as carbon dioxide and methane. If the digestion process is insufficient, the breakdown of these materials can be incomplete, leading to the accumulation of odorous compounds. These odors may be noticeable as sulfur compounds, ammonia, or other volatile organic compounds, indicating that the biological activity needed to effectively treat the waste is lacking. In contrast, low CO₂ levels might suggest that the biological processes are not generating enough carbon dioxide, but it is not as directly linked to digestion issues as odors. Excessive plant growth can be associated with nutrient levels in effluents rather than a direct sign of inadequate digestion. Rapid sludge settling typically indicates good treatment performance, as it reflects effective flocculation and settling rather than a lack of digestion. Thus, high volumes of odor serve as a crucial metric for plant operators to assess the status of the digestion process and take corrective measures if necessary.

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://texasclasscwastewatertreatment.examzify.com>

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