Texas Wastewater D Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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. In the carbon cycle, animals breathe ____, and plants breathe ___.

A. O2 - CO2

B. CO2 - O2

C. N2 - O2

D. O3 - CO

2. When raw sewage is or may become septic, which treatment step may be necessary?

A. Pre-aeration

B. Filtration

C. Chlorination

D. Coagulation

3. Asphyxiation can occur at any oxygen level below what percent?

A. 20 percent

B. 19.5 percent

C. 18 percent

D. 15 percent

4. F.O.G. should be removed before it enters the collection system, and this is best managed by a good _ _ program

A. Public Outreach

B. Cleaning Program

C. Industrial Waste

D. Odor Control

5. Settleable solids removal relies on gravity during which state of the sewage?

A. Turbulent state

B. Quiescent state

C. Aerated state

D. Fully mixed state

6. **The SVI calculation measures the compressibility of settled activated sludge as the volume (in milliliters) of mixed liquor required to contain how many grams of settled mlss?**

   A. Viscosity

   B. Settling rate

   C. Density

   D. Compressibility

7. **The typical duration of a POTW TPDES permit is how many years?**

   A. 3

   B. 5

   C. 1

   D. 2

8. **Which version of the activated sludge process will have a F/M ratio of 0.03 to 0.15 and a hydraulic detention time of 20 to 30 hours?**

   A. Complete mix

   B. Oxidation ditch

   C. Conventional

   D. Extended aeration

9. **PVC pipe is of what type?**

   A. Rigid

   B. Semi-rigid

   C. Brittle

   D. Flexible

10. **Which of the following is an example of a non-point source?**

    A. A single pipe discharge

    B. A municipal wastewater treatment plant discharge

    C. A factory effluent pipe

    D. A landfill

Answers

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

Explanations

1. In the carbon cycle, animals breathe ____, and plants breathe ___.

A. O2 - CO2

B. CO2 - O2

C. N2 - O2

D. O3 - CO

The essential idea is how gas exchange powers energy processes in living things. Animals require oxygen to break down food and release energy through cellular respiration, and carbon dioxide is produced as a waste product that is exhaled. Plants use carbon dioxide as a starting material for photosynthesis, turning it into glucose and releasing oxygen as a byproduct. So, in this sense, animals "breathe" O2 while plants "breathe" CO2. Keep in mind that plants also respire and consume oxygen, especially at night, but during typical daylight conditions photosynthesis drives a net uptake of CO2 and release of O2.

2. When raw sewage is or may become septic, which treatment step may be necessary?

A. Pre-aeration

B. Filtration

C. Chlorination

D. Coagulation

Introducing air into the wastewater to promote aerobic microbial activity is the key idea. When sewage is septic, oxygen is scarce and anaerobic microbes dominate, which leads to odors and slower stabilization. Pre-aeration provides oxygen early, jump-starting aerobic digestion, reducing odors and hydrogen sulfide formation, and helping downstream treatment proceed more efficiently. It also aids mixing and helps break up solids for later processing. The other steps don't directly address the lack of oxygen: filtration removes solids, coagulation targets particle flocculation, and chlorination disinfects but doesn't stabilize the organic load.

3. Asphyxiation can occur at any oxygen level below what percent?

A. 20 percent

B. 19.5 percent

C. 18 percent

D. 15 percent

Oxygen concentration dictates whether air is safe to breathe. Normal outdoor air contains about 20.9% oxygen. Safety standards define an oxygen-deficient atmosphere as 19.5% oxygen or lower because at that level the body's tissues receive insufficient oxygen, leading to impairment, dizziness, confusion, unconsciousness, and a real risk of asphyxiation if exposure continues. In wastewater work and confined-space safety, this threshold is used to trigger monitoring, ventilation, or protective measures. So, asphyxiation can occur at any oxygen level below 19.5 percent. The other options either sit above this hazard threshold or are not the standard safety cutoff used for defining oxygen deficiency.

4. F.O.G. should be removed before it enters the collection system, and this is best managed by a good _ _ program

A. Public Outreach

B. Cleaning Program

C. Industrial Waste

D. Odor Control

F.O.G. stands for fats, oils, and grease. When these substances enter the wastewater system, they cool and solidify, cling to pipes, and clog grease interceptors, leading to mainteance headaches, backups, and sanitary sewer overflows. The way to prevent that is through a comprehensive industrial waste program that regulates dischargers—like restaurants and other facilities—before they dump into the sewer. This program typically requires proper grease traps or interceptors, routines for pumping and maintenance, and inspections or permits to ensure dischargers are treating their wastes properly. While outreach helps inform owners about best practices, and odor issues can be addressed separately, the structured controls and enforcement of an industrial waste program are what effectively keep F.O.G. out of the collection system.

5. Settleable solids removal relies on gravity during which state of the sewage?

A. Turbulent state

B. Quiescent state

C. Aerated state

D. Fully mixed state

Settleable solids are removed by gravity when the wastewater is calm and still. In a quiescent state, there's little to no turbulence or mixing, so heavier particles can slowly settle to the bottom while clearer liquid remains above. If the sewage is turbulent or aerated, energy keeps solids dislodged and suspended, which hinders gravity-driven settling. Fully mixed or aerated conditions are used for biological treatment, not for gravity settling, and they prevent the solids from settling out.

6. The SVI calculation measures the compressibility of settled activated sludge as the volume (in milliliters) of mixed liquor required to contain how many grams of settled mlss?

A. Viscosity

B. Settling rate

C. Density

D. Compressibility

Sludge Volume Index measures how compressible the settled activated sludge is by relating the volume it occupies after settling to the amount of solids present. It is defined as the volume, in milliliters, of mixed liquor that settles in a standard period (30 minutes) divided by the mass of MLSS in grams. In practical terms, it is the volume needed to contain one gram of settled mlss. This is why the concept being tested is compressibility—the lower the SVI, the denser the settled sludge; the higher the SVI, the more volume the same mass of solids will occupy. It's not about viscosity, density, or settling rate, which describe other properties of the sludge.

7. The typical duration of a POTW TPDES permit is how many years?

A. 3

B. 5

C. 1

D. 2

Five years is the standard duration for POTW TPDES permits. This term provides enough time to set meaningful effluent limits, monitoring requirements, and compliance schedules, while still allowing regular reevaluation as technology, data, and water-quality standards evolve. It also fits typical municipal planning and budget cycles for long-term wastewater projects, making five years the practical horizon for permit terms. Shorter durations would mean more frequent renewals and greater administrative burden without delivering the same planning stability. So the typical duration is five years.

8. Which version of the activated sludge process will have a F/M ratio of 0.03 to 0.15 and a hydraulic detention time of 20 to 30 hours?

A. Complete mix

B. Oxidation ditch

C. Conventional

D. Extended aeration

In activated sludge design, the food-to-microorganism ratio (F/M) and the hydraulic detention time (HRT) are controlled to shape how aggressively biomass grows and how long wastewater stays in the reactor. The extended aeration setup is designed to run with a very low F/M—meaning only a small amount of organic food per unit of biomass—and a long detention time, typically around 20 to 30 hours. This combination encourages slow, thorough stabilization of the wastewater and minimizes sludge production, producing higher-quality effluent. The specified F/M range of 0.03 to 0.15 and the 20–30 hour HRT fit this configuration perfectly. Other configurations, like conventional or complete-mix systems, generally operate with higher F/M and shorter detention times, so they don't match these values as closely. Oxidation ditch can have longer retention than basic systems, but it's not typically associated with such a low F/M and such long HRT as a standard design.

9. PVC pipe is of what type?

A. Rigid

B. Semi-rigid

C. Brittle

D. Flexible

PVC pipe is a plastic that can be manufactured in different stiffness levels. In addition to the common rigid form used for many wastewater and drainage applications, there is a flexible variant (PVC with plasticizers) that can bend and contour around obstacles without needing many fittings. This flexibility is what the question is highlighting: PVC pipe can be made to be flexible, which is why this answer fits in contexts where the material's ability to bend is the point of discussion. The other descriptions don't match the material's practical forms as often used in plumbing and wastewater work—PVC isn't inherently brittle, and while there are rigid and semi-rigid forms, the emphasis in this context is on the flexible variant.

10. Which of the following is an example of a non-point source?

A. A single pipe discharge

B. A municipal wastewater treatment plant discharge

C. A factory effluent pipe

D. A landfill

Non-point source pollution comes from many diffuse sources rather than a single identifiable outlet. It typically results from runoff, infiltration, and leaching processes that pick up pollutants across a landscape and move them to a water body. A landfill fits this idea because contaminants can enter the environment through multiple pathways: leachate can migrate through soils and groundwater, and rainfall draining off the landfill can carry pollutants into nearby streams. There isn't one discrete discharge point to identify. The other options describe definite outlets: a single pipe discharge, a municipal wastewater treatment plant outfall, and a factory effluent pipe are all identifiable point sources.

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://texaswastewaterd.examzify.com

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