

ILLINOIS CLASS D WATER LICENSE PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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

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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. Which test is commonly used for determining fluoride levels in water?**
 - A. Colormetric Test
 - B. SPADNS Test
 - C. DPD Test
 - D. Conductivity Test
- 2. If a well pump motor is wired backwards, what will happen?**
 - A. It will still pump some water
 - B. It will not pump any water
 - C. It will overheat and shut down
 - D. It will pump water but at a reduced rate
- 3. What is the purpose of coagulation in water treatment?**
 - A. To enhance water flavor
 - B. To aggregate suspended particles into larger clumps for removal
 - C. To filter out bacteria
 - D. To elevate water temperature
- 4. What is activated carbon primarily used for in water treatment?**
 - A. Removing heavy metals
 - B. Disinfecting water
 - C. Removing taste and odor compounds
 - D. Filtering out microorganisms
- 5. How do you determine the needed dose of a chemical for water treatment?**
 - A. By estimating based on water clarity
 - B. By calculating based on water volume and desired concentration
 - C. By measuring the flow rate
 - D. By observing color changes in the water
- 6. What is a check valve mainly used for in a water system?**
 - A. To provide a backup source of water
 - B. To prevent water from flowing back into the well casing
 - C. To measure water levels during operation
 - D. To support the motor base during operation

- 7. What is the percentage of available chlorine in calcium hypochlorite?**
- A. 10 to 15%
 - B. 50 to 55%
 - C. 65 to 70%
 - D. 90 to 95%
- 8. How many million gallons per day (MGD) is equivalent to 98,000 gallons?**
- A. 0.0098 MGD
 - B. 0.098 MGD
 - C. 0.98 MGD
 - D. 0.00098 MGD
- 9. Which of the following amounts indicates a significant unaccounted water loss in a public system?**
- A. Less than 5%
 - B. More than 20%
 - C. 10% or less
 - D. 15% or less
- 10. What should be done immediately if a pump starts making unusual noises?**
- A. Increase the pump speed
 - B. Shut down the pump and investigate the cause
 - C. Ignore the noises until the pump stops
 - D. Perform routine maintenance on the pump

Answers

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

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Explanations

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1. Which test is commonly used for determining fluoride levels in water?

- A. Colormetric Test
- B. SPADNS Test**
- C. DPD Test
- D. Conductivity Test

The SPADNS test is commonly used for determining fluoride levels in water due to its specificity and sensitivity in measuring even low concentrations of fluoride. This method involves the use of a reagent that forms a colored complex with fluoride ions in a solution, allowing for quantification through colorimetric analysis. The color intensity developed is directly proportional to the concentration of fluoride present in the sample, making it an effective technique for monitoring and assessing fluoride levels in drinking water and other water sources. While the colormetric test encompasses a variety of methods for measuring concentration through color changes, it is not specific to fluoride, which makes SPADNS a more suitable choice when focusing solely on fluoride detection. The DPD test is utilized for assessing chlorine levels, and conductivity tests are generally used for measuring the overall ion content of water rather than specific ions like fluoride. Thus, the SPADNS test stands out as the preferred method for accurately determining fluoride levels.

2. If a well pump motor is wired backwards, what will happen?

- A. It will still pump some water**
- B. It will not pump any water
- C. It will overheat and shut down
- D. It will pump water but at a reduced rate

When a well pump motor is wired backwards, it can still pump some water because the motor is designed to create rotational force even if the wiring is incorrect. However, the direction of flow may be reversed, leading to inefficient operation or potentially other issues. This scenario illustrates that while the motor can operate, it may not function as intended, potentially causing problems with water distribution and system performance. Wiring a pump motor backwards primarily affects flow direction rather than the basic functionality of pumping. Therefore, some water can still be moved through the system, albeit possibly in the wrong direction. The other outcomes, such as overheating or complete failure to pump, are not guaranteed in this situation; many motors can run temporarily even when wired incorrectly without immediate catastrophic failure. Thus, the assertion that it will still pump some water is accurate given the context of how motors operate under such conditions.

3. What is the purpose of coagulation in water treatment?

- A. To enhance water flavor
- B. To aggregate suspended particles into larger clumps for removal**
- C. To filter out bacteria
- D. To elevate water temperature

Coagulation is a crucial step in water treatment aimed at improving water quality. The primary purpose of coagulation is to aggregate suspended particles present in the water into larger clumps, known as flocs. This process involves the addition of chemical coagulants, such as alum, which destabilize the charged particles in the water. As these small particles come together, they form larger aggregates that can be more easily removed by subsequent processes, including sedimentation and filtration. This method is particularly important because it effectively reduces turbidity and helps in removing contaminants such as dirt, silt, and organic matter, which might otherwise remain suspended in the water. By enhancing the water's clarity and quality through this aggregation, coagulation lays the foundation for subsequent treatment steps, ensuring that the water meets safety and cleanliness standards for consumption. Regarding the other choices, while enhancing flavor, filtering out bacteria, and elevating temperature are all part of water treatment processes, they do not directly pertain to the coagulation process. Coagulation specifically focuses on the aggregation of particles rather than these aspects.

4. What is activated carbon primarily used for in water treatment?

- A. Removing heavy metals
- B. Disinfecting water
- C. Removing taste and odor compounds**
- D. Filtering out microorganisms

Activated carbon is primarily utilized in water treatment for removing taste and odor compounds. This is due to its highly porous structure, which provides a large surface area for adsorption. When water passes through activated carbon, impurities such as chlorine, volatile organic compounds (VOCs), and certain inorganic substances bind to the carbon, effectively reducing undesirable tastes and odors. This process enhances the overall palatability of drinking water, making it more acceptable to consumers. While activated carbon has some capability to remove certain heavy metals and organic contaminants, its primary function is in addressing aesthetic issues related to taste and smell. Other treatment methods are typically more effective for disinfecting water or filtering out microorganisms, focusing on different contaminants and using various mechanisms. Therefore, the primary role of activated carbon aligns most closely with the removal of taste and odor compounds.

5. How do you determine the needed dose of a chemical for water treatment?

- A. By estimating based on water clarity
- B. By calculating based on water volume and desired concentration**
- C. By measuring the flow rate
- D. By observing color changes in the water

Determining the needed dose of a chemical for water treatment is primarily accomplished by calculating based on the water volume and desired concentration. This method takes into account the specific requirements of the treatment process, ensuring that the appropriate amount of chemical is added to achieve the desired effect. Calculating the dose involves knowing the total volume of water being treated and the target concentration of the chemical, which is typically expressed in milligrams per liter (mg/L) or parts per million (ppm). This calculation ensures that the treatment is effective and efficient, avoiding under-dosing, which may not adequately treat the water, or over-dosing, which could lead to harmful effects on water quality or create additional treatment challenges. Other methods, such as estimating based on water clarity, measuring the flow rate, or observing color changes in the water, do not provide the precise control and understanding necessary for effective chemical dosage in water treatment. These methods might give some insights, but they lack the systematic and quantitative approach that calculating based on volume and concentration offers, making them less reliable for determining the exact chemical dose required.

6. What is a check valve mainly used for in a water system?

- A. To provide a backup source of water
- B. To prevent water from flowing back into the well casing**
- C. To measure water levels during operation
- D. To support the motor base during operation

A check valve is primarily utilized in water systems to ensure that water flows in one direction and to prevent backflow. This is particularly important in various applications, such as preventing contamination of clean water sources by stopping water that may flow back into the well casing, which could occur due to pressure changes or other factors. The effective operation of check valves helps maintain system integrity by ensuring that the water distribution process is efficient and safe. In this context, the correct option emphasizes the critical role of check valves in maintaining the direction of flow within a system, thereby protecting both the water quality and the components of the water system. Other options address different functionalities that are not related to the primary function of check valves, such as backup sources of water, measuring water levels, or supporting motor bases, which do not describe the essential role of a check valve.

7. What is the percentage of available chlorine in calcium hypochlorite?

- A. 10 to 15%
- B. 50 to 55%
- C. 65 to 70%**
- D. 90 to 95%

Calcium hypochlorite is commonly used as a chlorine source for water disinfection due to its effectiveness and stability. The available chlorine percentage in calcium hypochlorite typically ranges between 65% and 70%. This high concentration of available chlorine makes it a potent disinfection option, especially in water treatment processes. When calcium hypochlorite is added to water, it releases chlorine, which acts as a strong oxidizing agent to kill bacteria, viruses, and other pathogens. The specific range of 65% to 70% indicates that for every 100 grams of calcium hypochlorite, there are 65 to 70 grams of available chlorine that can be utilized for disinfection purposes. Understanding the concentration of available chlorine is essential for operators and chemists working with water treatment, as it influences dosing rates, efficacy of disinfection, and overall water quality management. This knowledge helps ensure compliance with health and safety regulations in water treatment facilities.

8. How many million gallons per day (MGD) is equivalent to 98,000 gallons?

- A. 0.0098 MGD
- B. 0.098 MGD**
- C. 0.98 MGD
- D. 0.00098 MGD

To determine how many million gallons per day (MGD) are equivalent to 98,000 gallons, we start by understanding the conversion between gallons and million gallons. One million gallons equal 1,000,000 gallons. Therefore, to convert gallons to million gallons, you divide the number of gallons by 1,000,000. In this case, you take 98,000 gallons and divide it by 1,000,000: $98,000 \text{ gallons} \div 1,000,000 \text{ gallons/MGD} = 0.098 \text{ MGD}$. This calculation indicates that 98,000 gallons is equivalent to 0.098 million gallons per day. This value accurately reflects the conversion process, making it clear why this option correctly represents the amount given in the question. The other options do not match this calculation because they either overestimate or underestimate the equivalence of 98,000 gallons in MGD.

9. Which of the following amounts indicates a significant unaccounted water loss in a public system?

- A. Less than 5%
- B. More than 20%
- C. 10% or less**
- D. 15% or less

A significant unaccounted water loss in a public system is typically recognized as any loss that exceeds a certain threshold, which indicates issues like leaks, unauthorized usage, or measurement inaccuracies. When you consider the suggested benchmarks in the question, the amount representing considerable concern is more than approximately 10%. This is often used as a limit where the water loss can be seen as excessive. In the context of water management, water loss percentages usually help utilities identify inefficiencies and determine necessary actions to reduce losses. A percentage greater than 10% suggests that there are systemic issues that need addressing to improve operational performance and resource conservation. Therefore, when discussing pipeline systems and water management practices, a number reflecting a loss of 10% or less constitutes a threshold below which proactive measures can still be effective, while anything above this figure typically signals a need for immediate attention and remediation. Understanding this is crucial for water operators and management, as maintaining low water loss rates is essential for sustainability and fiscal responsibility in municipal water systems.

10. What should be done immediately if a pump starts making unusual noises?

- A. Increase the pump speed
- B. Shut down the pump and investigate the cause**
- C. Ignore the noises until the pump stops
- D. Perform routine maintenance on the pump

If a pump starts making unusual noises, it is crucial to shut down the pump and investigate the cause. Unusual noises can be indicative of various underlying problems, such as cavitation, mechanical failure, or pump imbalance, which can lead to more serious damage if not addressed promptly. By shutting down the pump, you not only prevent potential damage to the pump itself but also mitigate risks to the entire water system, including safety hazards or service interruption. Investigating the cause of the noise will allow for a proper diagnosis of the issue, ensuring that corrective measures can be taken before reactivating the pump. This proactive approach not only enhances the reliability of the pumping system but also extends the lifespan of the equipment. In contrast, increasing the pump speed or performing routine maintenance without first assessing the problem could exacerbate the situation or fail to resolve the underlying issue. Ignoring the noise is also inadvisable, as it may lead to catastrophic failure of the pump.

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://illinoisclassdwater.examzify.com>

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

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