

SANITATION, DESIGN, AND INSTALLATION PRE-BOARD 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 depth of lead poured over oakum in a caulk joint?**
 - A. 25 mm
 - B. 32 mm
 - C. 38 mm
 - D. 13 mm
- 2. Which method does not apply in the removal of suspended materials and color in the water supply?**
 - A. Sedimentation
 - B. Coagulation
 - C. Filtration
 - D. Chlorination
- 3. What is defined as a fixture in plumbing?**
 - A. A type of water closet
 - B. A receptacle for waste collection
 - C. A drain field component
 - D. A type of drainage system
- 4. What is the minimum diameter of a fire hose outlet for an interior wet standpipe?**
 - A. 25 mm dia
 - B. 41 mm dia
 - C. 20 mm dia
 - D. 38 mm dia
- 5. In plumbing, which type of connection is considered direct waste?**
 - A. One terminal solidly joined to the plumbing system
 - B. Pipes that empty directly into a waterway
 - C. Pipes that lead to filtration systems
 - D. Pipes connected to sewage treatment plants

6. Which type of water closet is known for being the least expensive and most prone to noise?
- A. Siphon jet
 - B. Reverse trap
 - C. Siphon washdown
 - D. Siphon vortex
7. The volume of a liquid passing through a cross section of a stream in unit time is known as:
- A. Steady flow
 - B. Uniform flow
 - C. Continuous flow
 - D. Discharge
8. What type of pump is categorized as a positive displacement pump?
- A. Rotary pump
 - B. Centrifugal pump
 - C. Turbine pump
 - D. Piston pump
9. What is a sedimentation chamber in a septic tank used for?
- A. To chlorinate sewage
 - B. For settling floating and suspended matter
 - C. To hold grease and oil
 - D. For aerobic bacteria growth
10. If the pressure of water at one point in a pipeline is 117.3 kPa and reduces to 110 kPa with a head loss of 0.2, what is the velocity at the second point?
- A. 5.57 m/s
 - B. 6.00 m/s
 - C. 5.79 m/s
 - D. 5.98 m/s

Answers

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

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Explanations

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1. What is the depth of lead poured over oakum in a caulk joint?

- A. 25 mm
- B. 32 mm
- C. 38 mm
- D. 13 mm

In a caulk joint, the depth of lead poured over oakum is typically recognized as being a standard measurement of 25 mm. This depth ensures that there is sufficient material to create a watertight seal while minimizing the risk of damage caused by thermal expansion or contraction. The use of oakum in combination with lead helps to fill the gaps, providing support and stability in the joint. Having the proper depth is critical for effective sealing and maintaining the structural integrity of the joint, which is essential in plumbing and HVAC systems where leaks could lead to significant issues. A depth of 25 mm is standard across the industry and contributes to proper installation practices in various applications.

2. Which method does not apply in the removal of suspended materials and color in the water supply?

- A. Sedimentation
- B. Coagulation
- C. Filtration
- D. Chlorination

The method that does not apply to the removal of suspended materials and color in the water supply is chlorination. Chlorination is primarily a disinfection process used to kill bacteria, viruses, and other pathogens in water. While it plays a crucial role in ensuring the microbiological safety of drinking water, chlorination does not effectively remove suspended solids or color from the water. In contrast, sedimentation, coagulation, and filtration are all processes designed to reduce turbidity by removing suspended particles. Sedimentation allows heavier particles to settle at the bottom of a container over time due to gravity. Coagulation involves adding chemicals that cause small particles to clump together, making them easier to remove. Filtration physically removes particles from water as it passes through a filter medium. Therefore, chlorination's purpose and function differ significantly from those methods aimed at removing physical impurities.

3. What is defined as a fixture in plumbing?

- A. A type of water closet
- B. A receptacle for waste collection
- C. A drain field component
- D. A type of drainage system

A fixture in plumbing refers to any device that is used for collecting, delivering, or draining water or waste. In this context, the correct choice is a receptacle for waste collection, which embodies the primary function of fixtures in a plumbing system. Fixtures are essential components that provide access to water supply and facilitate the removal of wastewater. Examples of fixtures include sinks, toilets, and bathtubs, all designed to handle water and waste in various contexts. The other options touch upon various plumbing components but do not capture the full definition of a fixture. A type of water closet is a specific kind of fixture, while a drain field component refers to part of a septic system unrelated to direct water or waste delivery. A type of drainage system encompasses broader infrastructure rather than a discrete device within a plumbing framework. Therefore, understanding fixtures as receptacles for waste collection provides clarity on their role within plumbing systems.

4. What is the minimum diameter of a fire hose outlet for an interior wet standpipe?

- A. 25 mm dia
- B. 41 mm dia
- C. 20 mm dia
- D. 38 mm dia**

The minimum diameter of a fire hose outlet for an interior wet standpipe is 38 mm. This specification is critical for ensuring that the outlet can deliver sufficient water flow to effectively combat fires. In fire protection systems, the size of the outlet directly impacts the pressure and flow rate that can be achieved. A diameter of 38 mm is chosen as it balances the need for effective water delivery with the capabilities of modern firefighting hoses, which are designed to accommodate and work efficiently with this size, ensuring optimum performance during an emergency situation. Using a smaller outlet diameter could limit the water flow, hampering firefighting efforts. Conversely, a larger outlet may not be practical within the design constraints of typical architectural settings and could lead to difficulties in manipulation and connection with hoses. Therefore, the selection of a 38 mm diameter is based on a combination of hydraulic requirements, operational efficiency, and practical application in fire response scenarios.

5. In plumbing, which type of connection is considered direct waste?

- A. One terminal solidly joined to the plumbing system**
- B. Pipes that empty directly into a waterway
- C. Pipes that lead to filtration systems
- D. Pipes connected to sewage treatment plants

The correct answer refers to a type of connection where one terminal is solidly joined to the plumbing system. This connection is referred to as direct waste because it allows for waste to be disposed of immediately and efficiently within the plumbing infrastructure. This means that the waste is directed away from the fixture and into the waste disposal system without any intermediary processes. Direct waste connections are crucial because they ensure that waste is managed effectively, minimizing the risk of contamination and ensuring that sanitation standards are upheld. This type of connection is designed to maintain an unobstructed flow of waste, allowing for proper drainage. The other options involve different forms of waste management. For example, pipes emptying directly into a waterway can pose environmental concerns and do not represent a closed plumbing system. Pipes leading to filtration systems may be part of a treatment process rather than direct waste disposal. Lastly, pipes connected to sewage treatment plants typically represent a more complex connection involving treatment and processing, rather than a straightforward, direct disposal method.

6. Which type of water closet is known for being the least expensive and most prone to noise?

- A. Siphon jet
- B. Reverse trap
- C. Siphon washdown**
- D. Siphon vortex

The siphon washdown water closet is typically recognized as the least expensive option among various types of toilets. This design utilizes a simple mechanism that relies on gravity to facilitate flushing, which helps keep production costs lower compared to more complex systems. Additionally, siphon washdown toilets are often prone to producing more noise during operation. The flushing process in these toilets can create a louder sound as water rushes into the bowl, leading to a more noticeable sound experience in the bathroom compared to other types like siphon jet or siphon vortex models, which are designed with more sophisticated mechanisms to manage sound and flushing efficiency. The combination of affordability and noise susceptibility makes the siphon washdown a common choice in many installations, particularly in situations where budget constraints are a significant factor. This is important for understanding the trade-offs that come with different toilet designs regarding cost and user experience.

7. The volume of a liquid passing through a cross section of a stream in unit time is known as:

- A. Steady flow
- B. Uniform flow
- C. Continuous flow
- D. Discharge**

The term that describes the volume of a liquid passing through a cross section of a stream in a unit of time is known as discharge. Discharge is a crucial concept in fluid dynamics and hydrology, as it quantifies how much fluid flows through a specific area over time, typically expressed in cubic meters per second (m^3/s) or liters per second (L/s). Understanding discharge is essential for applications like water resource management, environmental engineering, and civil engineering, where calculations related to river or stream flow are necessary for designing drainage systems, flood control measures, and other hydraulic structures. Other terms like steady flow, uniform flow, and continuous flow have their specific meanings in fluid mechanics. Steady flow refers to a condition where fluid properties at a point do not change over time, while uniform flow indicates that the flow parameters such as velocity and cross-sectional area remain constant along the length of the stream. Continuous flow implies that the fluid is flowing without interruption. However, none of these terms capture the specific measurement of volume flow per unit time that "discharge" does.

8. What type of pump is categorized as a positive displacement pump?

- A. Rotary pump
- B. Centrifugal pump
- C. Turbine pump
- D. Piston pump

A positive displacement pump operates by trapping a fixed amount of fluid and forcing it into the discharge pipe. This type of pump is characterized by its ability to maintain a constant flow rate, even against varying pressures. The rotary pump, which is recognized as a type of positive displacement pump, moves fluid by trapping it between the rotating elements and the chamber walls, thereby creating suction and pushing the fluid out. In rotary pumps, components such as gears or lobes rotate within a casing to create the necessary volume displacement. This mechanism allows for smooth and continuous flow, making rotary pumps useful in applications where consistent pressure and flow are required. In contrast, centrifugal and turbine pumps rely on rotating impellers to impart kinetic energy to the fluid, causing it to flow. These pumps depend on the speed of rotation and the fluid's characteristics, meaning their flow rates can vary with changes in system pressure. Piston pumps also are a type of positive displacement pump but are specifically designed to use a piston mechanism to move fluid, which is slightly different from the rotary action of the chosen answer. Thus, the classification of the rotary pump as a positive displacement pump highlights its unique operational mechanism that ensures a steady flow rate regardless of pressure conditions.

9. What is a sedimentation chamber in a septic tank used for?

- A. To chlorinate sewage
- B. For settling floating and suspended matter
- C. To hold grease and oil
- D. For aerobic bacteria growth

A sedimentation chamber in a septic tank plays a crucial role in the treatment of wastewater by facilitating the settling of floating and suspended solids. When wastewater enters the septic tank, it is designed to slow down the flow, allowing heavier particles to settle to the bottom. This process helps in the separation of solids from the liquid effluent. The solids that collect at the bottom form what is known as sludge, while lighter materials, such as grease and scum, float to the top. The efficiency of this sedimentation process is vital for the overall function of the septic system, as it reduces the amount of solid waste that would otherwise enter the drain field, potentially leading to clogs and system failure. Understanding the role of the sedimentation chamber is essential for anyone involved in the design, installation, or maintenance of septic systems, as it directly impacts the quality of effluent that is eventually discharged into the soil.

10. If the pressure of water at one point in a pipeline is 117.3 kPa and reduces to 110 kPa with a head loss of 0.2, what is the velocity at the second point?

A. 5.57 m/s

B. 6.00 m/s

C. 5.79 m/s

D. 5.98 m/s

To determine the velocity of water at the second point in the pipeline, it is essential to use the principles of fluid dynamics, specifically Bernoulli's equation, which relates the pressure, density, velocity, and height of a fluid in steady flow. First, we recognize that a change in pressure leads to a change in the velocity of the fluid. Given the initial pressure is 117.3 kPa and the final pressure is 110 kPa, we can calculate the drop in pressure: $\Delta P = P_1 - P_2 = 117.3 \text{ kPa} - 110 \text{ kPa} = 7.3 \text{ kPa}$ Next, it's important to convert these pressures into units compatible with the velocity equation. The density of water is approximately 1000 kg/m^3 , and we convert the pressure drop into pascals: $7.3 \text{ kPa} = 7300 \text{ Pa}$ Bernoulli's equation states that the pressure drop in a flowing fluid can be related to its velocity through the following rearrangement: $\Delta P = \frac{1}{2} \rho v^2$

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://sanitationdesinstallpreboard.examzify.com>

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

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