

GERTC Master of Science in Sanitary Engineering (MSTC) 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

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- 1. Which of the following correctly describes the relationship between BIM and project disciplines?**
 - A. BIM isolates each project discipline**
 - B. BIM integrates and relates various project disciplines**
 - C. BIM often complicates project communication**
 - D. BIM is typically used only for structural engineering**

- 2. What is a characteristic of precast concrete piles?**
 - A. They are always wooden**
 - B. They are manufactured off-site**
 - C. They require heavy machinery to install**
 - D. They cannot be customized**

- 3. What does a precedence diagram allow for in project scheduling?**
 - A. Visualization of component tasks**
 - B. Incorporation of lag-time factors**
 - C. Estimation of project costs**
 - D. Comparison of project timelines**

- 4. What indicates that a surface finishing technique has been performed to close off pores in the concrete?**
 - A. Dusting**
 - B. Crazing**
 - C. Edging**
 - D. Troweling**

- 5. Which cost specifically covers the expenses associated with routine maintenance?**
 - A. Repair cost**
 - B. Service cost**
 - C. Insurance cost**
 - D. Tax cost**

6. Which type of cost may arise due to mismanagement or conflicts during the project?

- A. Consequential costs**
- B. Authoritative costs**
- C. Direct costs**
- D. Contingency funds**

7. Which of the following factors is considered when determining storage cost?

- A. Insurance premiums for equipment**
- B. Wages of guards and employees handling equipment**
- C. The cost of oil and hydraulic fluids**
- D. Depreciation of the equipment**

8. Which term refers to concrete that is mixed and transported using truck-mounted mixers?

- A. Pre-mixed concrete**
- B. Ready-mixed concrete**
- C. Site-mixed concrete**
- D. Batch concrete**

9. Which type of contract is negotiated directly between an owner and a construction firm?

- A. Fixed-price contract**
- B. Cost-plus contract**
- C. Negotiated contract**
- D. Unit-price contract**

10. Construction documents that visually depict the extent and design of the work are known as what?

- A. Drawings**
- B. Plans**
- C. Diagrams**
- D. Models**

Answers

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

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Explanations

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1. Which of the following correctly describes the relationship between BIM and project disciplines?
 - A. BIM isolates each project discipline
 - B. BIM integrates and relates various project disciplines**
 - C. BIM often complicates project communication
 - D. BIM is typically used only for structural engineering

The relationship between Building Information Modeling (BIM) and project disciplines is best described by the integration and interrelation of various project disciplines. BIM serves as a collaborative platform that allows different disciplines—such as architecture, structural engineering, mechanical, electrical, and plumbing—to share information in real-time, facilitating better communication and coordination among all stakeholders involved in a project. This integrated approach ensures that changes made by one discipline can be easily communicated and reflected across all relevant areas, helping to prevent conflicts and inconsistencies. Consequently, BIM enhances teamwork and efficiency, ultimately leading to more successful project outcomes. This interconnectedness stands in contrast to the notion that BIM isolates disciplines or simplifies communication, as these would hinder the collaborative nature that BIM aims to promote. The focus on collaboration is fundamental to BIM's purpose, making it a critical tool in modern project management and design in the construction and engineering sectors.

2. What is a characteristic of precast concrete piles?
 - A. They are always wooden
 - B. They are manufactured off-site**
 - C. They require heavy machinery to install
 - D. They cannot be customized

Precast concrete piles are indeed manufactured off-site, which is a significant characteristic of this construction method. This off-site manufacturing allows for greater quality control, as the piles can be produced in a controlled environment. It also leads to quicker installation on-site since they can be delivered ready for use, thus improving efficiency in construction timelines. The off-site production of precast concrete piles means that they can be designed and fabricated according to specific engineering requirements and site conditions before they ever reach the construction site. This characteristic is pivotal in ensuring that the piles can be produced to desired lengths, shapes, and strengths necessary for their intended application. In contrast to the other options, precast concrete piles are not made of wood, can sometimes be installed using lightweight machinery depending on their size, and are indeed capable of customization in terms of design and specifications to meet particular structural needs.

3. What does a precedence diagram allow for in project scheduling?

- A. Visualization of component tasks**
- B. Incorporation of lag-time factors**
- C. Estimation of project costs**
- D. Comparison of project timelines**

A precedence diagram plays a crucial role in project scheduling by visually representing the sequence of tasks and how they relate to one another. It helps project managers identify the order in which tasks must be completed and allows for a clear understanding of dependencies between tasks. By incorporating lag-time factors, a precedence diagram ensures that any delays or waiting periods between tasks are accounted for. This is essential for accurately mapping out the project timeline, as it helps to factor in not just the start and end dates of activities but also any necessary gaps or overlaps that can occur due to resource availability or coordination between teams. In contrast, while visualization of component tasks, estimation of project costs, and comparison of project timelines are important aspects of project management, they are not the primary focus of what a precedence diagram provides. Instead, the diagram specifically emphasizes task dependencies and the incorporation of lag times, making it an essential tool for ensuring that the project schedule is both realistic and manageable.

4. What indicates that a surface finishing technique has been performed to close off pores in the concrete?

- A. Dusting**
- B. Crazing**
- C. Edging**
- D. Troweling**

The indication that a surface finishing technique has effectively closed off pores in the concrete is represented by troweling. This process involves using a trowel to smooth and finish the surface of the concrete after it has been placed. Troweling compacts the top layer and helps to fill in voids and pores, resulting in a denser, less permeable surface. This is crucial for enhancing the durability and water resistance of the concrete, ultimately contributing to its overall longevity and performance. The other options do not focus on the closure of pores in the concrete. Dusting typically refers to a surface defect caused by improper curing or finishing, where a fine powder forms on the surface. Crazing describes fine cracks that appear on the surface of the concrete due to shrinkage, which does not relate to pore closure and could even indicate problems with the finish. Edging involves rounding off the corners of the concrete at joints, which enhances appearance and safety but does not contribute to closing pores in the surface.

5. Which cost specifically covers the expenses associated with routine maintenance?

- A. Repair cost**
- B. Service cost**
- C. Insurance cost**
- D. Tax cost**

The choice indicating service cost accurately reflects the expenses associated with routine maintenance. Service costs encompass the ongoing expenses required to maintain an asset in good working condition and to ensure its operational readiness. This includes regular inspections, cleaning, lubrication, and any minor repairs necessary to keep equipment functioning properly over its designed lifespan. In contrast, repair costs typically arise from unforeseen breakdowns or damages that require significant intervention to restore an asset's functionality. Insurance costs reflect premiums paid to protect against potential damages or losses, which do not cover routine maintenance but rather potential future incidents. Tax costs are unrelated to maintenance, as they pertain to governmental charges imposed on assets or income, not directly tied to the upkeep of equipment. Hence, service costs are the most appropriate classification for routine maintenance expenses.

6. Which type of cost may arise due to mismanagement or conflicts during the project?

- A. Consequential costs**
- B. Authoritative costs**
- C. Direct costs**
- D. Contingency funds**

Consequential costs are costs that are not directly linked to the project but arise as a consequence of mismanagement, conflicts, or unforeseen issues during the course of a project. These costs can include delays that lead to increased expenses, penalties due to missed deadlines, or loss of business opportunities stemming from project inefficiencies. They often reflect the broader impact of poor planning or conflict resolution on the project's overall budget and timeline. In contrast, authoritative costs pertain to expenses that arise from specific directives or mandates within the project framework. Direct costs are expenses directly tied to project resources, such as labor and materials, while contingency funds are set aside in anticipation of unexpected costs and are not strictly associated with issues arising from mismanagement. Thus, the identification of consequential costs highlights the financial implications that can result from operational issues within a project.

7. Which of the following factors is considered when determining storage cost?

- A. Insurance premiums for equipment**
- B. Wages of guards and employees handling equipment**
- C. The cost of oil and hydraulic fluids**
- D. Depreciation of the equipment**

When determining storage cost, the wages of guards and employees handling equipment are a crucial factor because they directly relate to the personnel needed to manage and maintain the storage area effectively. Labor costs contribute significantly to the overall expenses that a facility incurs in ensuring that equipment is kept safe, securely stored, and readily accessible. In a storage context, having trained personnel is vital for protecting equipment from theft, damage, or neglect. Thus, the salaries associated with these roles are considered integral components of the storage cost as they reflect the necessary investment in human resources for the proper oversight and operational management of stored items. Other factors, while potentially relevant to operational costs, do not directly pertain to the specific assessment of storage costs. For instance, insurance premiums, the cost of maintenance fluids, and depreciation are more aligned with overall asset management rather than the explicit costs incurred due to storage practices. They represent broader financial considerations rather than the immediate logistical and labor-related expenses tied to the storage facility itself.

8. Which term refers to concrete that is mixed and transported using truck-mounted mixers?

- A. Pre-mixed concrete**
- B. Ready-mixed concrete**
- C. Site-mixed concrete**
- D. Batch concrete**

The term that refers to concrete that is mixed and transported using truck-mounted mixers is "ready-mixed concrete." This type of concrete is produced in a batch plant and is delivered to the construction site in a plastic or unhardened state. The primary advantage of ready-mixed concrete is that it ensures a uniform mix that meets specific engineering standards without the need for on-site mixing. Transporting concrete with truck-mounted mixers helps maintain its workability and prevents premature setting, which can occur if the concrete is not mixed and delivered promptly. Ready-mixed concrete is typically formulated for various construction needs and is especially advantageous in large-scale projects where consistent quality and efficient delivery are necessary. In contrast, pre-mixed concrete usually refers to a mixed product that is packaged and sold for small-scale or DIY projects, often requiring water to be added before use. Site-mixed concrete is mixed directly on the construction site, and batch concrete refers to concrete that is produced using a specific quantity of materials or in predetermined volumes, which may not necessarily involve truck-mounted transport.

9. Which type of contract is negotiated directly between an owner and a construction firm?

- A. Fixed-price contract**
- B. Cost-plus contract**
- C. Negotiated contract**
- D. Unit-price contract**

The type of contract that is negotiated directly between an owner and a construction firm is indeed a negotiated contract. This type involves direct discussions and agreements on the terms of the contract, including the scope of work, pricing, and other important details, which allows for a more personalized approach to the needs of both parties. In a negotiated contract, both the owner and the contractor communicate openly to reach a mutual agreement, often resulting in conditions that are beneficial for both sides. This process can enhance collaboration and trust, allowing adjustments based on specific project requirements and complexities. In contrast, fixed-price, cost-plus, and unit-price contracts all have predetermined pricing structures that typically do not involve the same level of negotiation between the owner and contractor. These types of contracts are often more rigid in terms of scope and pricing mechanisms, making them less flexible for direct negotiation on an individual project basis.

10. Construction documents that visually depict the extent and design of the work are known as what?

- A. Drawings**
- B. Plans**
- C. Diagrams**
- D. Models**

Construction documents that visually represent the extent and design of the work are best described as drawings. Drawings serve as comprehensive visual guides that provide detailed information about the structures, materials, and methods to be used in a construction project. They typically include plans, elevations, sections, and details which collectively convey the design intent and specifications necessary for construction. While plans, diagrams, and models are related concepts, they serve distinct purposes. Plans usually refer to a specific type of drawing that outlines the layout of a project. Diagrams often simplify complex information and focus on specific systems or processes rather than providing a representation of the entire project. Models, whether physical or digital, are three-dimensional representations that may be used for visualization and analysis but do not replace the detailed information provided in technical drawings needed for actual construction. Therefore, drawings encompass the full scope of construction documentation, making them the accurate choice for this question.

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://gertcmstc.examzify.com>

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

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