

PE CIVIL CONSTRUCTION PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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

<https://pecivilconstruction.examzify.com>



Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

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

SAMPLE

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

SAMPLE

- 1. What is the primary purpose of a cofferdam?**
 - A. To prevent soil erosion
 - B. To create a waterproof enclosure for construction work
 - C. To aid in concrete curing
 - D. To support underground utilities
- 2. How is a one-way slab defined?**
 - A. When the long end to short end ratio is less than 2
 - B. When the long end to short end ratio is equal to 2
 - C. When the long end to short end ratio is greater than or equal to 2
 - D. When it can carry vertical loads from all directions
- 3. When is it appropriate to use a mat foundation instead of a pile foundation?**
 - A. When the building is very light
 - B. When there are a limited number of columns/walls
 - C. When the soil is strong and stable
 - D. When the soil is weak and the structure is heavy
- 4. Which reference manuals are used for temporary structures during construction?**
 - A. ACI 318-14 and ASCE 7-10
 - B. ASCE 37-14 and ACI 347-07
 - C. ACI 301 and ASCE 10
 - D. ASCE 36 and AISC 360
- 5. What is the density of water in metric units?**
 - A. 1000 kg/m³
 - B. 62.4 lb/ft³
 - C. 9.8 n/m³
 - D. 14.7 psi
- 6. What characterizes a free outlet in hydraulic engineering?**
 - A. An outlet where the tailwater is lower than the critical depth
 - B. An outlet that allows maximum flow at all times
 - C. An outlet that restricts backflow during heavy rainfall
 - D. An outlet only used for drainage purposes

- 7. What does the federal acquisition regulation (FAR) govern?**
- A. The construction of transportation infrastructure
 - B. The acquisition process for federal government contracts
 - C. The enforcement of national building codes
 - D. The management of environmental regulations
- 8. How many square feet are there in one acre?**
- A. 30000 ft²
 - B. 40000 ft²
 - C. 43560 ft²
 - D. 50000 ft²
- 9. Why is quality control critical in construction?**
- A. To streamline the approval process
 - B. To ensure materials and workmanship meet specified standards
 - C. To maximize profit margins
 - D. To enhance team communication
- 10. What is the correct ratio of concrete to sand to coarse aggregate in a concrete mixture?**
- A. 1:2:3
 - B. 1:1:2
 - C. 1:1:1
 - D. 1:2:4

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is the primary purpose of a cofferdam?

- A. To prevent soil erosion
- B. To create a waterproof enclosure for construction work**
- C. To aid in concrete curing
- D. To support underground utilities

The primary purpose of a cofferdam is to create a waterproof enclosure for construction work. A cofferdam is a temporary structure built to hold back water from an area where construction is occurring, usually in or near a body of water like a river or lake. By providing a dry, work-friendly environment, cofferdams enable construction activities to proceed safely and effectively, such as foundation work for bridges, dams, or other submerged structures. This specialized structure ensures that workers can access the site without dealing with the challenges posed by water ingress, which can complicate excavation and construction processes. Additionally, cofferdams also protect the construction site from erosion and help manage sedimentation, which further emphasizes their importance in various civil engineering projects. The other options do relate to environmental and construction processes but do not capture the primary function of a cofferdam as effectively as creating a waterproof enclosure does.

2. How is a one-way slab defined?

- A. When the long end to short end ratio is less than 2
- B. When the long end to short end ratio is equal to 2
- C. When the long end to short end ratio is greater than or equal to 2**
- D. When it can carry vertical loads from all directions

A one-way slab is defined as a slab that primarily spans in one direction and is efficient at carrying loads along that direction. The specific criterion stating that the long end to short end ratio is greater than or equal to 2 helps to categorize the slab as one-way. This ratio indicates that the slab is significantly longer in one direction compared to the other, which means that the bending moments and shear forces a slab experiences will be predominantly along the longer span. In practical terms, this means that for a slab to be considered one-way, it typically will have a longer dimension at least twice as long as the shorter dimension. As a result, the reinforcement in the slab can be placed predominantly in the direction of the longer span, which optimizes material use and supports efficiency in construction. The other options do not accurately reflect the definition. A ratio less than 2 suggests that the slab does not have a pronounced direction of span, which would imply that it is more likely a two-way slab capable of carrying loads in multiple directions. A ratio equal to 2 does not sufficiently establish the characteristics of a one-way slab since it needs to indicate that the span is notably greater. Lastly, the option stating that the slab can carry vertical loads from all directions describes

3. When is it appropriate to use a mat foundation instead of a pile foundation?

- A. When the building is very light
- B. When there are a limited number of columns/walls
- C. When the soil is strong and stable
- D. When the soil is weak and the structure is heavy**

A mat foundation is typically used in scenarios where the soil conditions and structural loads necessitate a more robust foundation system. This type of foundation is particularly advantageous when the soil is weak, as it spreads the load of the structure over a large area, thereby reducing the pressure on the soil to well within its bearing capacity. In the case presented, when the structure is heavy and the soil is weak, the mat foundation serves to distribute the weight more evenly across a broader area, helping to prevent excessive settlement and potential structural failure. This allows the building to safely rest on unstable ground where a traditional shallow foundation might not be feasible. Conversely, in situations where the building is light, or when there are a limited number of supporting columns or walls, a mat foundation is often not necessary. Strong and stable soil conditions are typically more suited for conventional shallow foundations or even less complex systems, as they can adequately support the loads without the elaborate design required for mat or pile foundations. Thus, the choice of a mat foundation becomes particularly relevant when faced with both heavy loads and inadequate soil strength.

4. Which reference manuals are used for temporary structures during construction?

- A. ACI 318-14 and ASCE 7-10
- B. ASCE 37-14 and ACI 347-07**
- C. ACI 301 and ASCE 10
- D. ASCE 36 and AISC 360

The use of ASCE 37-14 and ACI 347-07 as reference manuals for temporary structures during construction is highly relevant due to their specific focus on this area. ASCE 37 provides guidelines for the design of temporary structures, including criteria for assessing loads and safety considerations, which ensures the integrity of structures during construction activities. ACI 347, on the other hand, is focused on the design and construction of formwork for concrete structures and provides necessary guidelines to ensure that formwork can support the loads imposed by fresh concrete safely and effectively. Together, these standards provide a comprehensive framework for designing temporary structures, ensuring that safety, load considerations, and practicalities of construction processes are thoroughly addressed. This makes them ideal references for engineers involved in the design and execution of temporary construction elements, such as scaffolding, shoring, and formwork. In contrast, the other options do not specifically target the temporary structures in a construction context as directly as ASCE 37 and ACI 347 do.

5. What is the density of water in metric units?

A. 1000 kg/m³

B. 62.4 lb/ft³

C. 9.8 n/m³

D. 14.7 psi

The density of water in metric units is indeed 1000 kg/m³. This value represents the mass of water occupying a volume of one cubic meter. Density is defined as mass per unit volume, and for water, this standardized figure is commonly used in various scientific and engineering calculations. In many applications, especially in civil engineering and related fields, knowing the density of water is crucial for calculations involving buoyancy, fluid pressure, and hydraulic structures. The value of 1000 kg/m³ is representative of pure water at a temperature of around 4 degrees Celsius, where it reaches its maximum density. The other options pertain to different units or physical properties. For example, 62.4 lb/ft³ is the density of water expressed in imperial units, while 9.8 N/m³ relates to the weight density of water due to gravitational effects. Lastly, 14.7 psi is a measurement of pressure and does not pertain to density at all. Thus, the choice indicating a metric density of 1000 kg/m³ accurately reflects established standards in physics and engineering.

6. What characterizes a free outlet in hydraulic engineering?

A. An outlet where the tailwater is lower than the critical depth

B. An outlet that allows maximum flow at all times

C. An outlet that restricts backflow during heavy rainfall

D. An outlet only used for drainage purposes

A free outlet in hydraulic engineering is characterized by the condition where the tailwater is lower than the critical depth. This condition ensures that the water flows out of the outlet freely and unobstructed, as the back pressure exerted by the tailwater is minimal. When the tailwater level is lower than the critical depth, the flow can be considered as free flow, enabling the outlet to operate efficiently and at its design capacity. In this scenario, critical depth refers to the specific depth of flow at which the energy in the water is minimized, creating optimal conditions for water to exit the outlet without being impeded by downstream conditions. The feasibility of maintaining this state is crucial for the effective design and management of hydraulic systems, particularly in managing stormwater and ensuring that flooding risks are minimized. The other options do not accurately capture the essence of what defines a free outlet. For instance, maximum flow at all times is not necessarily linked to the specific condition of the tailwater being lower than critical depth. Similarly, the restriction of backflow during heavy rainfall does not define a free outlet and instead ties into different drainage system considerations. Lastly, limiting the use of an outlet solely for drainage purposes does not encompass the broader context of free flow principles in hydraulic systems.

7. What does the federal acquisition regulation (FAR) govern?

- A. The construction of transportation infrastructure
- B. The acquisition process for federal government contracts**
- C. The enforcement of national building codes
- D. The management of environmental regulations

The Federal Acquisition Regulation (FAR) is a comprehensive set of rules that govern the acquisition process for federal government contracts. It provides the legal framework and guidelines that federal agencies must follow when procuring goods and services. This includes everything from the solicitation of bids to the award of contracts and the management of contract performance. The FAR is essential for ensuring competition, promoting fair dealings, and maintaining integrity in government procurement processes. The other options, while related to areas of governance and regulation, do not accurately describe the specific focus of the FAR. For instance, the construction of transportation infrastructure, enforcement of national building codes, and management of environmental regulations fall under various other regulations and standards that are not covered by the FAR.

8. How many square feet are there in one acre?

- A. 30000 ft²
- B. 40000 ft²
- C. 43560 ft²**
- D. 50000 ft²

One acre is defined as a unit of area that is equal to 43,560 square feet. This measurement is part of the imperial system used primarily in the United States for land area. The calculation is based on the dimensions of the acre, which traditionally is known to be 660 feet long by 66 feet wide, yielding a total area of 43,560 square feet. Understanding the acre's historical context helps clarify its dimensions and why this specific measurement is significant in real estate, agriculture, and land development practices. Acreage is a standard measure used to quantify land, making it important for various calculations in civil engineering and construction projects. The other figures provided do not correspond to the standard measurement of an acre, which reinforces that 43,560 square feet is the correct and recognized area for one acre.

9. Why is quality control critical in construction?

- A. To streamline the approval process
- B. To ensure materials and workmanship meet specified standards**
- C. To maximize profit margins
- D. To enhance team communication

Quality control is vital in construction because it ensures that both materials and workmanship meet specified standards. This aspect is essential for multiple reasons: First, adherence to standards guarantees that the final structure is safe, reliable, and capable of withstanding the intended loads and conditions. Without quality control, there is a heightened risk of structural failures, which can lead to severe consequences, including safety hazards, costly repairs, and legal complications. Second, meeting specified standards fosters consistency throughout the project. It establishes clear benchmarks for performance and compliance, helping to mitigate variations that could compromise the integrity of the work. This is particularly critical in large-scale construction projects where multiple teams or subcontractors are involved. Furthermore, a rigorous quality control process often includes inspections, testing, and documentation, which can contribute to better project outcomes and increased client satisfaction. This aspect not only helps in achieving the desired quality but can also have financial benefits in the long run by reducing the need for rework or avoiding failures. This focus on quality emphasizes the importance of maintaining high standards throughout the construction process and highlights why effective quality control is an indispensable component in achieving successful construction projects.

10. What is the correct ratio of concrete to sand to coarse aggregate in a concrete mixture?

- A. 1:2:3
- B. 1:1:2
- C. 1:1:1
- D. 1:2:4**

The correct ratio of concrete to sand to coarse aggregate in a concrete mixture is 1:2:4. This ratio indicates the proportion of materials used to create concrete, where one part is cement, two parts are sand (fine aggregate), and four parts are coarse aggregate. This specific mix design is commonly used for general-purpose concrete that requires good workability and strength. The 1:2:4 ratio balances the components to ensure adequate strength and durability, making it a standard choice for many structural applications. It allows for sufficient aggregate to create a stable and firmly packed concrete mix, which is essential for preventing shrinkage and ensuring that the concrete can support the loads it will encounter once cured and set. Other ratios, while useful in different contexts, do not offer the same balance for general construction purposes. For instance, a 1:1:2 ratio would lead to a denser mix, which may increase strength but could result in workability issues and higher costs. The other ratios like 1:2:3 and 1:1:1 may also be suitable for specific applications but do not provide the same characteristics that make 1:2:4 widely accepted in typical construction projects.

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://pecivilconstruction.examzify.com>

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

SAMPLE