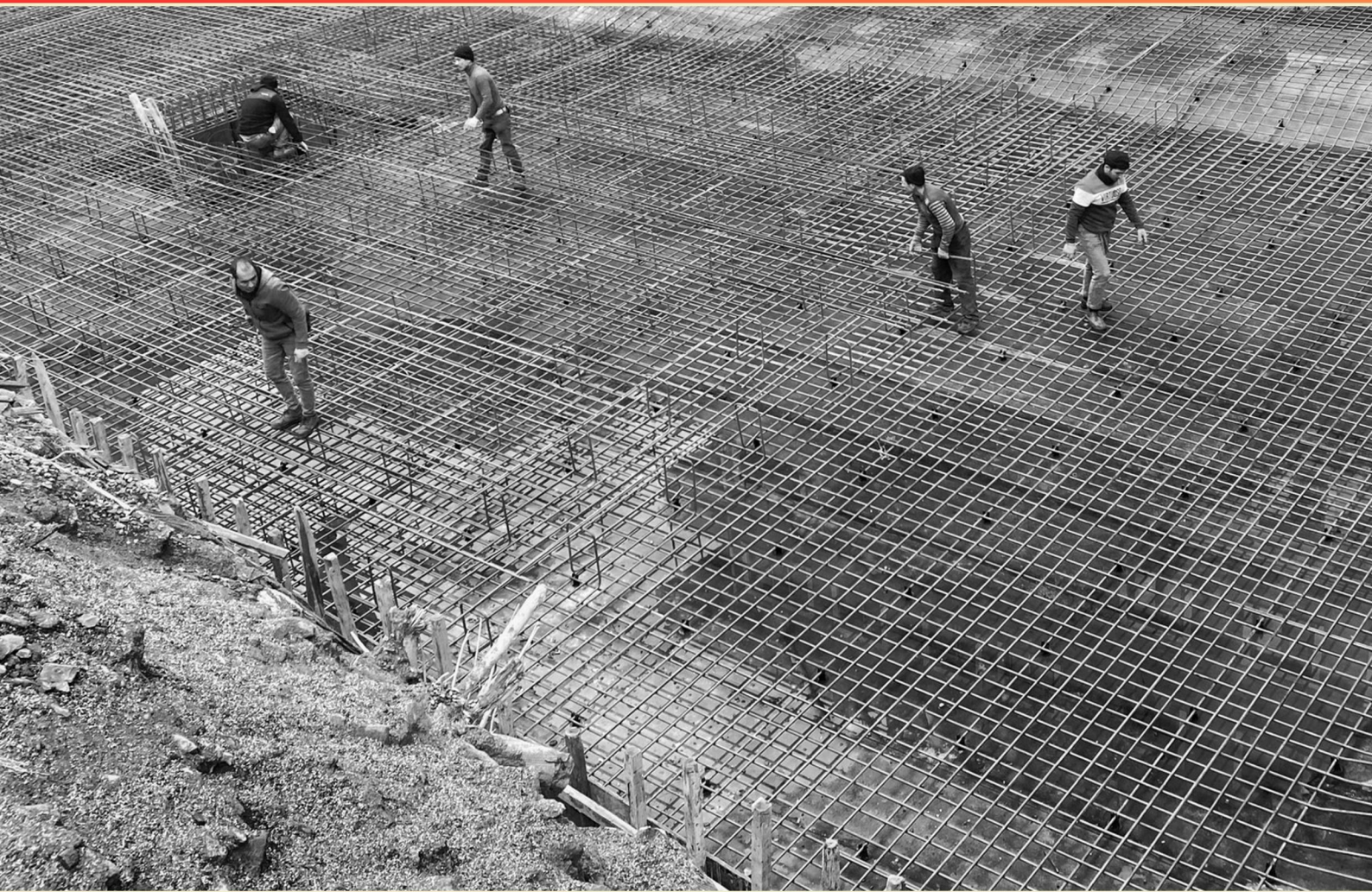


AMERICAN CONCRETE INSTITUTE (ACI) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://americanconcreteinst.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	15

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 maximum allowed transportation time for test specimens, in hours?
 - A. 2 Hours
 - B. 4 Hours
 - C. 6 Hours
 - D. 8 Hours
2. Tamping rod penetration into each layer should be approximately how deep?
 - A. about 0.5 inch
 - B. about 1.5 inches
 - C. about 2 inches
 - D. about 1 inch
3. If the concrete sample is to be consolidated by rodding, the measure is filled in ____ layers.
 - A. 3
 - B. 2
 - C. 4
 - D. 5
4. How long must the temperature sensor remain in the freshly mixed concrete?
 - A. 1 minute
 - B. 10 minutes
 - C. 2-5 minutes
 - D. 30 seconds
5. How many strokes are required per layer when rodding the sample?
 - A. 20
 - B. 15
 - C. 30
 - D. 25

6. Which value represents the approximate depth after placing the first layer?
- A. 2 5/8 inch
 - B. 2 3/8 inch
 - C. 3 inches
 - D. 2 1/2 inch
7. What is the approximate volume of the measuring cup used to add water to the air meter, in relation to the volume of the air meter bowl?
- A. 0.50% ± 0.02%
 - B. 1.00% ± 0.04%
 - C. 2.00% ± 0.04%
 - D. 5.00% ± 0.10%
8. Field curing is the curing method used when test specimens are to be used for _____.
- A. Determination Of Whether The Structure Is Capable Of Being Put Into Service; Comparison With Standard Cured Specimens Test Results; Adequacy Of Curing And Protection Of Concrete
 - B. Acceptance For Specified Strength
 - C. Durability Of Concrete
 - D. Workability
9. The slump test mold is shaped like which geometric form?
- A. Frustum of a cone
 - B. Cylinder
 - C. Cube
 - D. Pyramid
10. When the concrete contains aggregate larger than allowed for the slump test, the large aggregate must be ____.
- A. Removed by washing
 - B. Ground to smaller size
 - C. Removed by wet sieving
 - D. Discarded at the batch plant

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is the maximum allowed transportation time for test specimens, in hours?

- A. 2 Hours
- B. 4 Hours**
- C. 6 Hours
- D. 8 Hours

The main idea is keeping the time from batching to arrival at the testing lab short enough that the concrete's initial set and moisture state don't change the test results. Four hours is the commonly allowed window because, beyond that, ongoing hydration and temperature/ moisture changes can make the cylinder strength unrepresentative of the actual batch. Sticking to a four-hour transport limit helps ensure the specimens reflect how the concrete performed in construction. If this window can't be met, the practice is to remake specimens from the same batch and retest, since the original results may no longer be valid.

2. Tamping rod penetration into each layer should be approximately how deep?

- A. about 0.5 inch
- B. about 1.5 inches
- C. about 2 inches
- D. about 1 inch**

In a slump test, concrete is filled in layers and each layer is compacted with a tamping rod. The rod should penetrate into the underlying layer by about one inch. This depth provides sufficient consolidation of the current layer to remove air voids without disturbing or mixing with the layer below. If penetration is too shallow, the layer may not be adequately compacted, leading to an inaccurate slump. If penetration is too deep, you risk overworking and disturbing the lower layer, altering the reading. So, about one inch is the best choice.

3. If the concrete sample is to be consolidated by rodding, the measure is filled in ____ layers.

- A. 3**
- B. 2
- C. 4
- D. 5

When consolidating concrete by rodding, the mold is filled in three equal layers. This approach ensures air is expelled progressively and the concrete is compacted uniformly throughout the height of the specimen, reducing voids and achieving a true, level top surface after tamping. Each layer is compacted with the tamping rod (commonly about 25 strokes per layer), which helps push the aggregate together and eliminate gaps between layers. Filling in three layers is the standard practice for rodding to produce consistent, repeatable test cylinders.

4. How long must the temperature sensor remain in the freshly mixed concrete?

- A. 1 minute
- B. 10 minutes
- C. 2-5 minutes**
- D. 30 seconds

Measuring the temperature of freshly mixed concrete requires enough time for the thermometer to come to equilibrium with the concrete. Right after mixing, the concrete is still adjusting and the sensor has a finite response time, so a very short immersion won't give a stable, representative reading. Leaving the sensor in the mix for about 2 to 5 minutes allows the temperature to stabilize and provides an accurate value at placement. If you pull it out too quickly (30 seconds or 1 minute), the reading may still be influenced by surface contact or transient conditions; waiting much longer (like 10 minutes) isn't necessary and could allow ambient conditions or ongoing mixing to alter the reading. This 2–5 minute window balances accuracy with practical field timing and aligns with standard procedures for determining the temperature of fresh concrete.

5. How many strokes are required per layer when rodding the sample?

- A. 20
- B. 15**
- C. 30
- D. 25

Consolidating freshly mixed concrete in a mold uses a specific number of strokes per layer to ensure the specimen has uniform density without causing segregation. The standard practice for preparing strength test cylinders is to rod each layer a fixed number of times, and fifteen strokes per layer is the commonly recommended count. Performing 15 strokes per layer properly compacts the concrete, helps eliminate entrapped air, and produces a representative density throughout the mold. If you used more strokes, you risk overworking the mix, pushing mortar and fines, or creating surface voids; fewer strokes can leave voids and inconsistent density. By sticking to fifteen strokes per layer, you achieve reliable, consistent specimens for strength testing.

6. Which value represents the approximate depth after placing the first layer?

- A. 2 5/8 inch**
- B. 2 3/8 inch
- C. 3 inches
- D. 2 1/2 inch

The key idea is that when you build up thickness in two layers, the depth of the first layer is chosen so that, after applying the second layer, you reach the required total thickness. In this case, the final thickness to achieve is 3 inches, and the second layer will contribute 3/8 inch. So the first layer should be 3 inches minus 3/8 inch, which equals 2 5/8 inches. That's why 2 5/8 inch is the correct depth after placing the first layer. The other values would not combine with a 3/8 inch second layer to reach the specified 3 inches.

7. What is the approximate volume of the measuring cup used to add water to the air meter, in relation to the volume of the air meter bowl?

- A. $0.50\% \pm 0.02\%$
- B. $1.00\% \pm 0.04\%$**
- C. $2.00\% \pm 0.04\%$
- D. $5.00\% \pm 0.10\%$

The amount of water you add with the measuring cup is designed to be a tiny, controlled step relative to the air meter bowl, so each fill represents a small, repeatable change in the air volume. Using a cup that is about 1% of the bowl's volume provides a practical balance between precision and usability—the increments are small enough to give good resolution, but not so small that the process becomes tedious. The specified tolerance, $\pm 0.04\%$, accounts for slight variations in bowl size and reading, keeping the overall measurement uncertainty in check. If the cup were much larger (several percent of the bowl), the readings would be less precise due to coarser steps; if it were much smaller, it would be impractical to complete the assay efficiently. Therefore, the best choice is that the measuring cup's volume is about 1.00% of the air meter bowl, with a tolerance of $\pm 0.04\%$.

8. Field curing is the curing method used when test specimens are to be used for _____.

- A. Determination Of Whether The Structure Is Capable Of Being Put Into Service; Comparison With Standard Cured Specimens Test Results; Adequacy Of Curing And Protection Of Concrete**
- B. Acceptance For Specified Strength
- C. Durability Of Concrete
- D. Workability

Field curing mirrors on-site conditions so test specimens can show whether the concrete will reach the required strength and be suitable for service. It also allows comparison with standard-cured specimens to evaluate curing adequacy and protection in the field. This approach directly addresses whether the structure can be put into service and whether the field curing is sufficient, whereas workability and durability concerns are separate topics.

9. The slump test mold is shaped like which geometric form?

- A. Frustum of a cone**
- B. Cylinder
- C. Cube
- D. Pyramid

The test uses a mold that is a frustum of a cone—a truncated cone with a wider bottom and a narrower top. This shape fixes a defined volume for the concrete sample and allows it to release cleanly when the mold is lifted, so the height it slumps can be measured consistently. The taper helps the concrete to flow and settle with less sticking to the walls, which makes the slump a repeatable, reliable indication of workability. If the mold were a full cone, removing it would trap the apex and disturb the sample, making the slump harder to measure consistently. A cylinder would have the same cross-section along height, increasing friction with the walls and altering slump behavior. A cube or pyramid would create irregular flow and hinder removal, leading to nonuniform results.

10. When the concrete contains aggregate larger than allowed for the slump test, the large aggregate must be ____.

- A. Removed by washing
- B. Ground to smaller size
- C. Removed by wet sieving**
- D. Discarded at the batch plant

For the slump test, the sample used must not contain aggregate larger than the size permitted for the test. If oversized aggregate is present, it should be removed from the sample by wet sieving through a sieve that corresponds to the maximum allowed size. Doing this while the sample is wet helps keep the moisture state of the sample consistent and prevents fines or cement paste from being washed away or affected by drying. Washing would alter the water content and fines, grinding would change the aggregate size distribution in a way that's not representative, and discarding the batch at the plant isn't how the slump test is conducted. So the oversized aggregate is removed by wet sieving.

SAMPLE

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://americanconcreteinst.examzify.com>

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

SAMPLE