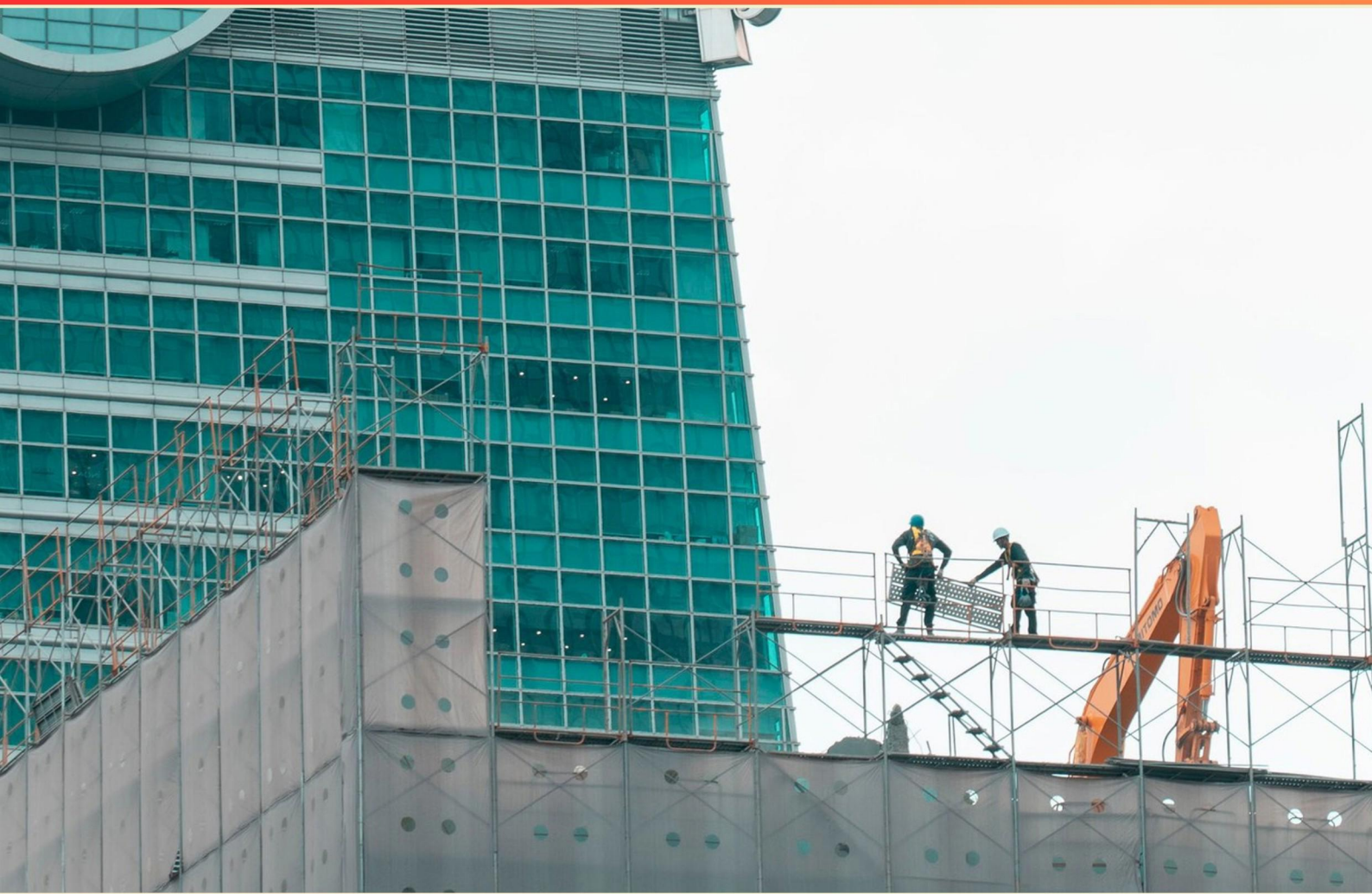


AMERICAN INSTITUTE OF CONSTRUCTORS (AIC) LEVEL 1 PRACTICE TEST (SAMPLE) STUDY GUIDE



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. In a three-phase power calculation, which constant approximates $\sqrt{3}$ when computing real power using $P = \sqrt{3} \times V \times I \times PF$?
 - A. 1.41
 - B. 2.00
 - C. 3.14
 - D. 1.73
2. Concrete's primary strength is in which type of strength?
 - A. Compressive strength
 - B. Tensile strength
 - C. Shear strength
 - D. Fluid strength
3. What is the free float for activity E?
 - A. 0
 - B. 1
 - C. 2
 - D. 3
4. Which of the following is a management system used to improve customer satisfaction?
 - A. TQM
 - B. Six Sigma
 - C. Lean
 - D. All the above
5. A company has \$10,000 in cash, \$20,000 in equipment, and \$20,000 in accounts payable. The tax rate is 13%. What is the current ratio if current assets are considered as cash and current liabilities are accounts payable?
 - A. 0.67
 - B. 1.3
 - C. 0.5
 - D. 1.5

6. If a job has more than one shift, how often should a daily report be completed?
- A. Once a day
 - B. Each shift
 - C. Twice a day
 - D. Once a week
7. In the boring log example, at approximately what depth would you expect to find very stiff gray sandy clay?
- A. 5 ft to 9 ft
 - B. 10 ft to 14 ft
 - C. 15 ft to 19 ft
 - D. 20 ft to 22 ft
8. Which is the unit of measure for AC power?
- A. Coulomb
 - B. Volt
 - C. Watt
 - D. Ampere
9. Three resistors in parallel, each $4\ \Omega$. What is the total resistance?
- A. $4\ \Omega$
 - B. $1.33\ \Omega$
 - C. $0.75\ \Omega$
 - D. $12\ \Omega$
10. In which delivery method is the construction administrator most like a consultant?
- A. lump sum
 - B. CM at risk
 - C. CM agency
 - D. integrated project delivery

Answers

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

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Explanations

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1. In a three-phase power calculation, which constant approximates $\sqrt{3}$ when computing real power using $P = \sqrt{3} \times V \times I \times PF$?

- A. 1.41
- B. 2.00
- C. 3.14
- D. 1.73**

In a balanced three-phase system, the real power relates to line values through $P = \sqrt{3} \times V_{\text{line}} \times I_{\text{line}} \times PF$. The $\sqrt{3}$ factor comes from the relationship between line and phase quantities in three-phase math: V_{line} is $\sqrt{3}$ times V_{phase} (and I_{line} equals I_{phase} in a balanced setup), which when combined gives the $\sqrt{3}$ factor in the power formula. The numeric value of $\sqrt{3}$ is about 1.732, so it's typically approximated as 1.73 in calculations. That's why 1.73 is the best fit. The other numbers don't match this geometric relationship: 1.41 is $\sqrt{2}$, not applicable here; 2.00 and 3.14 are not correct approximations for $\sqrt{3}$.

2. Concrete's primary strength is in which type of strength?

- A. Compressive strength**
- B. Tensile strength
- C. Shear strength
- D. Fluid strength

Concrete resists compression much better than tension because its cement paste and aggregate mixture distributes and bears loads effectively when squeezed. Under compression, the particles press together and the internal microstructure can close cracks, so concrete can carry heavy loads smoothly. When pulled apart, cracks form quickly and propagate because there's limited natural resistance to opening cracks in the cement paste and at the cement–aggregate interfaces, so tensile strength is much lower. In structural design, this is why reinforced concrete pairs concrete's high compressive capacity with steel reinforcement to handle tensile forces; the steel takes the tension while the concrete handles the compression. Shear strength is a factor in some scenarios, but it isn't the primary property of concrete, and "fluid strength" isn't a standard characteristic of concrete. So the primary strength of concrete is compressive strength.

3. What is the free float for activity E?

- A. 0**
- B. 1
- C. 2
- D. 3

Free float is the amount of time an activity can be delayed without delaying the early start of its immediate successor(s). It's found by comparing when the next activities must start with when this activity finishes: $\text{Free float} = (\text{earliest start of successors}) - (\text{finish of this activity})$. If the earliest start of every successor is exactly the finish time of this activity, there is no room to delay it without pushing a successor's start. That makes the free float zero. In this situation, delaying E would push at least one successor's start, so E has no slack. If there were a gap between E's finish and its successors' earliest starts, the difference would be positive, giving a positive free float.

4. Which of the following is a management system used to improve customer satisfaction?

- A. TQM
- B. Six Sigma
- C. Lean
- D. All the above**

The goal here is to improve customer satisfaction by building quality and value into every part of the process. TQM looks at quality across the entire organization and emphasizes continuous improvement and meeting customer needs with involvement from everyone. Six Sigma uses data-driven methods to find and remove causes of defects and variation, delivering more reliable products and services, which boosts customer trust. Lean focuses on eliminating waste and streamlining flow to deliver faster, more efficient value to customers. Each approach targets a different path to better customer outcomes, so using them together covers the full range of improvements that raise satisfaction. That's why choosing all of the above is the best answer.

5. A company has \$10,000 in cash, \$20,000 in equipment, and \$20,000 in accounts payable. The tax rate is 13%. What is the current ratio if current assets are considered as cash and current liabilities are accounts payable?

- A. 0.67
- B. 1.3
- C. 0.5**
- D. 1.5

Current ratio compares assets that can quickly become cash with obligations due soon. Here, current assets are just cash of \$10,000, and current liabilities are accounts payable of \$20,000. So the current ratio is $10,000 / 20,000 = 0.5$. The tax rate doesn't affect this measure, and the equipment value is a long-term asset, not included in current assets. A ratio below 1 suggests the company may have liquidity challenges in the near term, since current liabilities exceed readily available current assets.

6. If a job has more than one shift, how often should a daily report be completed?

- A. Once a day
- B. Each shift**
- C. Twice a day
- D. Once a week

Each shift requires its own daily report because it captures what happened during that specific period of work. When a job runs more than one shift, conditions, productivity, crews, and issues can vary from shift to shift. A single report for the entire day would blend those differences, making it hard to see who did what, when, and under what conditions. By completing a daily report for each shift, you get an accurate, shift-by-shift record of work performed, manpower, equipment used, materials, weather, safety concerns, changes in scope, and any problems that arose. This improves accountability, progress tracking, and smooth handovers between crews.

7. In the boring log example, at approximately what depth would you expect to find very stiff gray sandy clay?

- A. 5 ft to 9 ft
- B. 10 ft to 14 ft
- C. 15 ft to 19 ft
- D. 20 ft to 22 ft**

Reading a boring log to locate a particular soil type by depth is the main idea here. Very stiff gray sandy clay indicates a clay-rich layer with high shear strength, typically darker gray and resisting deformation more than surrounding sands or silts. In the boring log example, that stiff gray sandy clay is shown at deeper depth, around 20 to 22 feet, which is why this range is selected. The shallower intervals—5 to 9 feet, 10 to 14 feet, and 15 to 19 feet—usually contain softer materials like fill, loose sands, or softer clays, so they don't match a "very stiff" clay description. Therefore, the depth where you'd expect that very stiff gray sandy clay is approximately 20 to 22 feet.

8. Which is the unit of measure for AC power?

- A. Coulomb
- B. Volt
- C. Watt**
- D. Ampere

Power is the rate at which energy is transferred or work is done. The standard unit for power is the watt, defined as one joule per second. In AC circuits, the real power drawn is $V_{rms} \times I_{rms} \times \text{power factor}$, and its unit is still watts. The other symbols represent different electrical quantities: volt is potential difference, ampere is current, and coulomb is electric charge. So AC power is measured in watts. If you ever see VA or VAR, those are different concepts (apparent power and reactive power) and not the actual power in watts.

9. Three resistors in parallel, each 4 Ω . What is the total resistance?

- A. 4 Ω
- B. 1.33 Ω**
- C. 0.75 Ω
- D. 12 Ω

In parallel, total resistance is found by adding the reciprocals of each resistor: $1/R_{total} = 1/R_1 + 1/R_2 + 1/R_3$. Since all three resistors are 4 Ω , $1/R_{total} = 1/4 + 1/4 + 1/4 = 3/4$, so $R_{total} = 1/(3/4) = 4/3 \Omega$, which is about 1.33 Ω . This shows why the total resistance in parallel is lower than any individual resistor. The other numbers come from common traps: 4 Ω would be if only one path existed, 12 Ω from adding in series (4+4+4), and 0.75 Ω would be the reciprocal sum before taking the final inverse. The correct result is 1.33 Ω .

10. In which delivery method is the construction administrator most like a consultant?

- A. lump sum
- B. CM at risk
- C. CM agency**
- D. integrated project delivery

The delivery method where the construction manager acts most like a consultant is CM Agency. In this setup, the construction manager serves as the owner's adviser and representative, providing expertise in design coordination, budgeting, scheduling, and procurement, while the owner holds the contracts with designers and trade contractors. The CM's role is to inform and guide decisions rather than to perform construction or guarantee a price, which aligns with a consultant's function. Lump sum places the builder in a primary contracting role with a fixed price, so the administrator is acting more like a contractor than a consultant. CM at risk involves the manager also acting as a constructor who bears risk for price and schedule, not just advice. Integrated project delivery emphasizes a collaborative, integrated team with shared risk and reward, which also moves beyond a pure consulting stance.

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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://aiclevel1.examzify.com>

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

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