

AZ ROC HARDSCAPING AND IRRIGATION SYSTEMS – RESIDENTIAL AND COMMERCIAL (CR-21) PRACTICE EXAM (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. When planting a tree, what is the best method to help insure its survival?
 - A. Add compost and topsoil
 - B. Back fill with native soil
 - C. Water deeply without backfill
 - D. Use only sand to backfill
2. A transformer with a photocell should be installed in what location?
 - A. Where there is ample shade
 - B. In a cabinet
 - C. Where there is ample sun
 - D. Near a water source
3. How do you choose a weir?
 - A. Calculate exact head to fit
 - B. Without calculations, it is better to go with a bigger weir
 - C. Use a standard size recommended by manufacturer
 - D. Choose based on material
4. Which formula is used to calculate wattage in electrical circuits?
 - A. $P = V \times I$
 - B. $P = I \times V^2$
 - C. $P = V^2 / R$
 - D. $P = V / I$
5. What is the friction loss for 10 gallons per minute in 100 ft of 3/4 inch pipe?
 - A. 4.30
 - B. 2.15
 - C. 6.50
 - D. 9.25
6. What can be applied to arid region tree trunks to prevent water loss?
 - A. Whitewash Paint
 - B. Tar
 - C. Oil
 - D. Wax

- 7. What voltage does an automated sprinkler system typically operate at?**
- A. 24
 - B. 120
 - C. 240
 - D. 12
- 8. After the first course of a black wall, how long should you wait before continuing?**
- A. Immediately
 - B. A few hours (2-3)
 - C. 24 hours
 - D. 1 week
- 9. Which of the following is the strongest wood?**
- A. Oak
 - B. Pine
 - C. Bamboo
 - D. Maple
- 10. When can you use a drain valve in the main and lateral pipes for winter drainage?**
- A. During winter, regardless of frost level
 - B. When the frost level is greater than five feet
 - C. Only when there is active leakage
 - D. When the frost level is less than one foot

Answers

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

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Explanations

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1. When planting a tree, what is the best method to help insure its survival?

- A. Add compost and topsoil
- B. Back fill with native soil**
- C. Water deeply without backfill
- D. Use only sand to backfill

Backfilling with native soil helps the tree establish by keeping the root zone in harmony with the surrounding soil. When the backfill matches the site's texture, drainage, and chemistry, roots can grow outward into the existing soil more easily, which reduces transplant shock and promotes quicker, more reliable establishment. Using a different material for backfill—like compost and topsoil or sand—can create layers that drain or compact differently than the surrounding soil, making it harder for roots to penetrate and potentially causing water or nutrient imbalances around the root zone. Watering deeply after planting is important, but it can't compensate for a backfill that doesn't integrate with the site soil. Place the tree so the root flare is at or just above ground level, loosen compacted soil, backfill in manageable layers, and water to settle the soil, then mulch appropriately to maintain consistent moisture.

2. A transformer with a photocell should be installed in what location?

- A. Where there is ample shade
- B. In a cabinet
- C. Where there is ample sun**
- D. Near a water source

Photocells work by sensing ambient light to determine day and night, so they need a clear view of the sun. Placing the transformer with the photocell in a sunny outdoor location ensures the sensor reads daylight correctly and switches on/off at the right times. If it's in shade, inside a cabinet, or behind obstacles, the sensor can't see the light properly and the system may operate at the wrong times. Choose an exposed, weatherproof outdoor spot with ample sun exposure, and keep it dry and protected from direct spray.

3. How do you choose a weir?

- A. Calculate exact head to fit
- B. Without calculations, it is better to go with a bigger weir**
- C. Use a standard size recommended by manufacturer
- D. Choose based on material

When selecting a weir, the goal is to ensure the device can handle the expected flow without becoming the limiting factor and with a usable measurement range. If you don't have precise head calculations handy, choosing a larger weir provides a safety margin: it reduces the risk of undersizing for higher-than-anticipated flows and gives you room to capture a wider range of discharges without hitting the crest. In practice, you'd still aim to determine the actual head-for-flow relationship later (calculation or testing) to optimize the size, but a larger weir acts as a practical default when exact data isn't available. Material and a manufacturer's standard size can guide you, but they don't substitute for sizing based on the flow range you expect.

4. Which formula is used to calculate wattage in electrical circuits?

- A. $P = V \times I$**
- B. $P = I \times V^2$
- C. $P = V^2 / R$
- D. $P = V / I$

Power is the rate at which electrical energy is transferred, so the basic way to calculate watts is the product of voltage and current: $P = V \times I$. This comes from energy per unit charge (voltage) multiplied by how many charges flow per second (current), giving energy transferred per second. If you know resistance, you can also express power as $P = V^2 / R$ (or equivalently $P = I^2 R$) using Ohm's law. These are valid forms, but the fundamental starting point is $P = VI$. The other proposed forms don't represent power correctly: $P = I \times V^2$ has incorrect units for watts, and $P = V / I$ equals resistance, not power.

5. What is the friction loss for 10 gallons per minute in 100 ft of 3/4 inch pipe?

- A. 4.30**
- B. 2.15
- C. 6.50
- D. 9.25

Friction loss is the pressure drop caused by water rubbing against the pipe walls as it flows. It depends on the flow rate, the pipe size, and the pipe's roughness, and for irrigation work we estimate it using friction-loss charts or the Hazen-Williams equation. For a standard 3/4 inch line at 10 gallons per minute, the charted friction loss is about 4.3 feet of head per 100 feet. So over 100 feet you'd expect roughly a 4.3-foot drop in pressure (about 1.9 psi). That's why this option is the best match for the given conditions. The other values don't align with typical friction losses for this pipe size and flow.

6. What can be applied to arid region tree trunks to prevent water loss?

- A. Whitewash Paint**
- B. Tar
- C. Oil
- D. Wax

Protecting trunk surfaces from intense sun and heat helps cut water loss in arid climates. Whitewash paint reflects a large portion of sunlight, keeping the trunk cooler and reducing heat-driven moisture evaporation from the bark. It provides a light, breathable coating that protects against sunscald while still allowing the trunk to exchange moisture and gases as needed. In contrast, tar, oil, or wax create barriers that can trap moisture, promote decay, or disrupt gas exchange, which can worsen moisture stress rather than alleviate it. So applying whitewash paint to trunks is the best way to help the tree conserve water in dry conditions.

7. What voltage does an automated sprinkler system typically operate at?

- A. 24**
- B. 120
- C. 240
- D. 12

Sprinkler systems use low-voltage control for the valve solenoids. The controller powers the field valves by a transformer that takes the common household supply (120 VAC) and steps it down to 24 VAC. This 24-volt level is chosen because it is safely low for wiring that runs through yards, it keeps wiring costs down, and it reliably energizes diaphragm-style valves without needing heavy-duty conductors. Higher voltages would require more robust wiring and safety measures, and are not standard for valve operation. A 12-volt option is not typical for modern irrigation valves, which is why 24 VAC is the standard.

8. After the first course of a block wall, how long should you wait before continuing?

- A. Immediately
- B. A few hours (2-3)**
- C. 24 hours
- D. 1 week

Waiting a short period after laying the first course lets the mortar gain some initial strength and set enough to support the next courses. This keeps the wall from shifting or sliding as you add more units and helps keep the height and level consistent. A few hours (around 2–3) provides enough time for a tacky, stable base before continuing, without unnecessarily slowing progress. Going immediately ahead can cause alignment and bond issues, while waiting much longer isn't needed for the initial set.

9. Which of the following is the strongest wood?

- A. Oak
- B. Pine
- C. Bamboo**
- D. Maple

Strength in materials comes from how well a substance can carry load without failing, especially when you consider weight. Bamboo stands out because its long, fibrous structure runs the full length of the culm and is reinforced by segmented nodes, giving high tensile strength and stiffness for its light weight. That combination makes it resist bending and cracking under load more effectively than the other options, particularly when you compare strength relative to weight. It's worth noting bamboo isn't technically wood—it's a grass—but in practical hardscaping use its mechanical properties often surpass those of many hardwoods like oak and maple and even outpace pine in strength-to-weight terms. Real-world performance also depends on treatment, age, and species, but overall bamboo tends to be the strongest choice among these options.

10. When can you use a drain valve in the main and lateral pipes for winter drainage?

- A. During winter, regardless of frost level
- B. When the frost level is greater than five feet
- C. Only when there is active leakage
- D. When the frost level is less than one foot**

Water in irrigation main and lateral lines can freeze and cause damage, so the lines are drained to remove that water. Opening the drain valves is appropriate when the frost level is shallow—less than one foot—because at that depth the surrounding soil is not reliably keeping the pipe temperature above freezing, and any remaining water in the pipes is at risk of freezing. Draining at this level helps prevent cracks and burst pipes by letting water escape before it freezes. If the frost depth is deeper than one foot, the soil around the pipes stays cold but not necessarily at freezing temperatures for the pipe interior, and other winterization methods or leaving water in place may be appropriate; unnecessary drainage in that case wastes water and could leave other parts inadequately protected. The option about active leakage isn't the trigger for draining during winterization, and using a drain valve when frost is very deep (like five feet) isn't typically needed because the risk of freezing is different and other protections are used.

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://azroccr21.examzify.com>

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

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