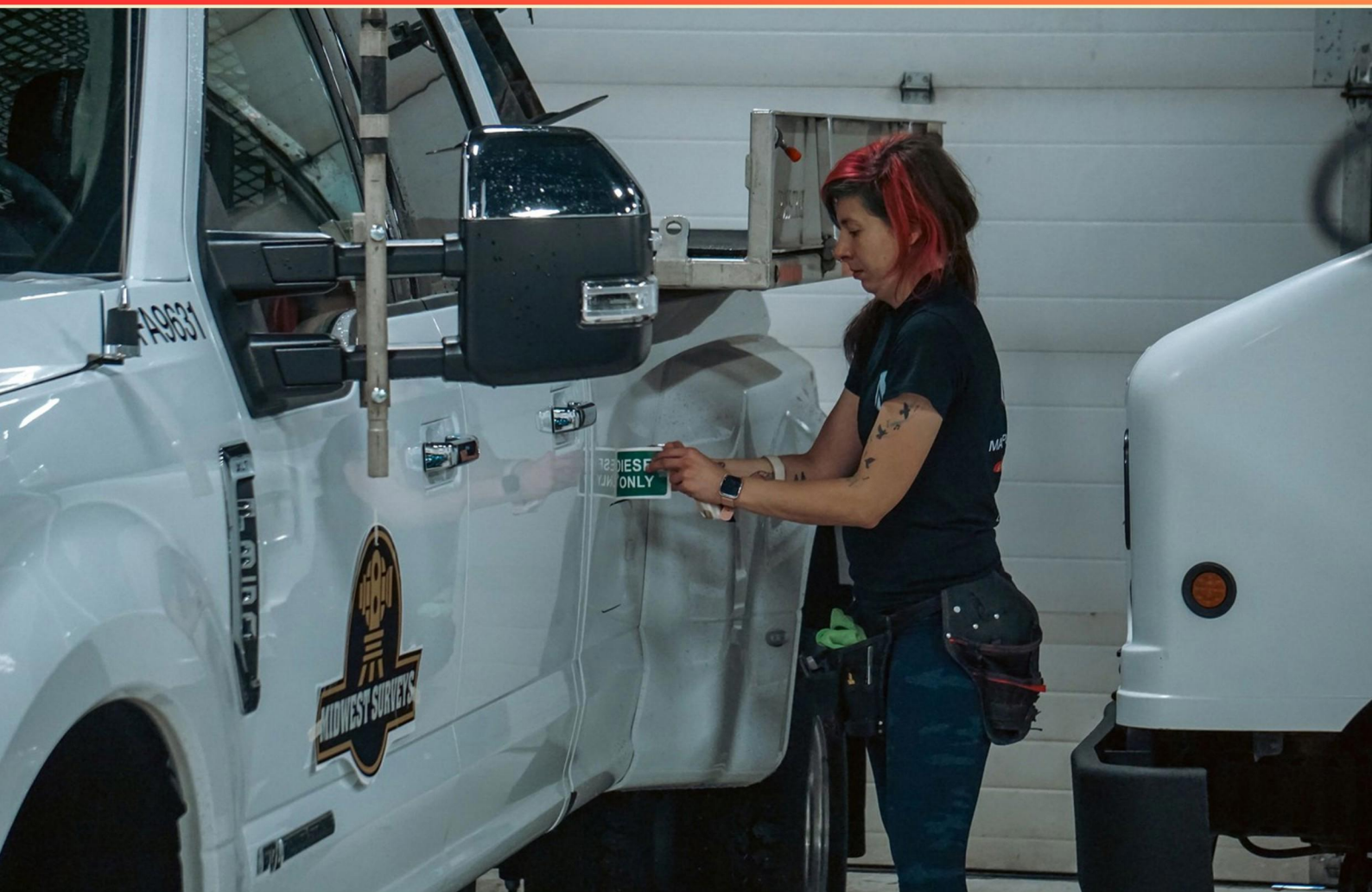


SCE GROUNDMAN PRACTICE EXAM (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. What is the ampacity for 4/0 triplex?**
 - A. 250 A
 - B. 275 A
 - C. 300 A
 - D. 350 A
- 2. Pole setting depth is specified in which code section?**
 - A. 101-3(a)
 - B. 102-2(b)
 - C. 103-4(c)
 - D. 102-3(a)
- 3. Bracket Grounding is performed with sets of grounds located on each end of a section of downed conductors, with maximum spacing apart of how many feet?**
 - A. 1000 ft
 - B. 1500 ft
 - C. 2000 ft
 - D. 2500 ft
- 4. What is the approved method for assisting an injured lineman to the surface?**
 - A. Portable gantry
 - B. Elevator hoist
 - C. Ladder system
 - D. Crane lift
- 5. What should you do if an unauthorized person enters the work zone?**
 - A. Ignore the unauthorized person and continue work.
 - B. Stop work, clear the area, and notify supervision; enforce safety boundaries.
 - C. Offer them a seat and explain procedures.
 - D. Redirect them to observe from a safe point.

- 6. Which device is commonly used to counteract inductive reactance on feeders and improve power factor?**
- A. Recloser
 - B. Capacitor bank
 - C. Fault locator
 - D. Transformer
- 7. Voltage is defined as what electrical property?**
- A. Electrical resistance
 - B. Electrical current
 - C. Electrical pressure
 - D. Magnetic field strength
- 8. When is a hot-work permit required?**
- A. For tasks performed by external contractors.
 - B. Never; permits are optional.
 - C. Only for electrical tasks.
 - D. For tasks involving open flame, sparks, or heat generation; includes fire watch and extinguishing equipment.
- 9. Which statement best defines the arc-flash boundary in electrical work?**
- A. The distance to reduce energy exposure to a safe level; remain outside unless PPE or other controls justify entry.
 - B. The minimum clearance for passing personnel around energized equipment.
 - C. A tag that identifies energized equipment.
 - D. An area where only supervisors may perform tasks.
- 10. What is the ampacity of #6 bare copper?**
- A. 80
 - B. 140
 - C. 160
 - D. 190

Answers

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

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Explanations

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1. What is the ampacity for 4/0 triplex?

- A. 250 A
- B. 275 A
- C. 300 A**
- D. 350 A

Ampacity is the maximum continuous current a conductor can carry under specified conditions without its insulation overheating. For overhead triplex, cooling is fairly good because the conductors are in open air, so the higher temperature rating of the insulation is used in practice. A 4/0 triplex is a common service-size conductor in distribution. When installed in open air with typical insulation rated for 90°C, the standard practice is to assign it about 300 A of ampacity. This reflects typical utility engineering tables and field sizing for this size and installation method. The exact value can shift with ambient temperature, grouping, and insulation type, but 300 A is the conventional figure used in many exams and engineering checks for 4/0 triplex under normal overhead conditions. If you compare to other scenarios, copper versus aluminum and the insulation's temperature rating (75°C vs 90°C) will change the numbers, but for standard overhead 4/0 triplex, 300 A is the common reference.

2. Pole setting depth is specified in which code section?

- A. 101-3(a)
- B. 102-2(b)
- C. 103-4(c)
- D. 102-3(a)**

Pole setting depth is defined in the part of the standards that covers how poles are installed. This section specifically lays out how deep a pole must be buried to stay stable under typical loads, while accounting for soil conditions and frost depth. Because it directly addresses embedment and installation procedures, it's the authoritative place to find the required depth. The other sections deal with different topics related to construction and equipment, so they don't provide the pole embedment requirements.

3. Bracket Grounding is performed with sets of grounds located on each end of a section of downed conductors, with maximum spacing apart of how many feet?

- A. 1000 ft
- B. 1500 ft
- C. 2000 ft
- D. 2500 ft**

Bracket grounding uses grounding sets at both ends of a downed conductor section to create a low-impedance path to earth and to bound the voltage along the span. The spacing between those end grounds is limited to keep the voltage difference along the span within safe limits under fault conditions, reducing dangerous touch and step voltages for workers nearby. If the ends were allowed to be farther apart, the voltage could rise along the span and pose a greater shock risk. The maximum spacing specified for this setup is 2,500 feet, which safely limits potential along the span while still being practical. Grounding closer than that is safer but the question asks for the maximum allowable distance, which is 2,500 feet.

4. What is the approved method for assisting an injured lineman to the surface?

- A. Portable gantry**
- B. Elevator hoist
- C. Ladder system
- D. Crane lift

The main idea is that a safe pole-to-surface rescue needs a setup that is quickly deployed on the ground and provides a stable, controlled way to lower an injured lineman. A portable gantry fits that need. It is a ground-supported frame that can be placed around the pole and used with a hoist to carefully lower the injured worker or raise them as needed. This gives rescuers precise control of descent, keeps the patient supported in a harness, and minimizes movement and risk to both the patient and the rescuers. The other methods are less ideal for this scenario. An elevator hoist isn't as readily positioned for a pole rescue near live lines and can be cumbersome or unsafe in confined or elevated spaces. A ladder system relies on climbing and moving a ladder with an injured person, which can be unstable and increase the risk of further injury. A crane lift involves heavy equipment, longer setup, and greater complexity with overhead hazards and line clearance, making it less practical for a typical on-site rescue.

5. What should you do if an unauthorized person enters the work zone?

- A. Ignore the unauthorized person and continue work.
- B. Stop work, clear the area, and notify supervision; enforce safety boundaries.**
- C. Offer them a seat and explain procedures.
- D. Redirect them to observe from a safe point.

Stopping work and taking immediate steps to protect everyone is the priority when an unauthorized person enters the work zone. This situation creates unpredictable hazards from moving equipment, energized lines, and other risks, so you pause to prevent injury. Clearing the area ensures a safe distance while you assess the situation and keep bystanders out of danger. Notifying supervision is essential so the proper safety boundaries can be enforced and access can be controlled going forward. It's not the time to try to explain procedures or keep the person nearby; the correct move is to remove the person from the zone and await guidance from supervision to restore safe conditions.

6. Which device is commonly used to counteract inductive reactance on feeders and improve power factor?

- A. Recloser
- B. Capacitor bank**
- C. Fault locator
- D. Transformer

A capacitor bank is used to offset inductive reactance and improve power factor because capacitors supply leading reactive power (VARs) to counteract the lagging VARs drawn by inductive loads on feeders. Installing capacitors locally near the feeder provides this reactive power where it's needed, so for the same real power, the current required is reduced, losses go down, and voltage regulation along the feeder improves. Other devices serve different functions: a recloser is for interrupting fault currents and restoring service after faults, a fault locator helps pinpoint where faults occur, and a transformer changes voltage levels but does not actively supply reactive power to correct power factor.

7. Voltage is defined as what electrical property?

- A. Electrical resistance
- B. Electrical current
- C. Electrical pressure**
- D. Magnetic field strength

Voltage is the electrical potential difference that pushes charges to move in a circuit. It's like electrical pressure that drives current, providing the energy per unit charge to do work as charges move from one point to another. This is why voltage is what makes current flow through a conductor. It is not electrical resistance, which is the opposition to current; nor is it electrical current itself, which is the rate of charge flow; nor is it magnetic field strength, which relates to magnetism rather than driving charge flow.

8. When is a hot-work permit required?

- A. For tasks performed by external contractors.
- B. Never; permits are optional.
- C. Only for electrical tasks.
- D. For tasks involving open flame, sparks, or heat generation; includes fire watch and extinguishing equipment.**

Hot-work permits are required whenever work involves ignition sources—open flame, sparks, or heat generation. This ensures fire safety controls are in place before work starts. The permit process typically requires a fire watch, readily available extinguishing equipment, and removal or protection of flammable materials in the work area. It covers activities like welding, cutting with torches, grinding that produces sparks, soldering, and plasma cutting—anything that can start a fire. This isn't limited to external contractors, and it isn't optional. It isn't confined to electrical tasks; electrical work may involve its own safety checks, but hot work specifically focuses on ignition risks from heat and flames.

9. Which statement best defines the arc-flash boundary in electrical work?

- A. The distance to reduce energy exposure to a safe level; remain outside unless PPE or other controls justify entry.**
- B. The minimum clearance for passing personnel around energized equipment.
- C. A tag that identifies energized equipment.
- D. An area where only supervisors may perform tasks.

Arc-flash boundary is the distance from exposed live parts at which an arc-flash could deliver enough energy to cause injury. It's defined by a specific energy level (typically 1.2 cal/cm^2), which corresponds to a potential second-degree burn. This boundary is about how much energy a person could be exposed to, not just physical space. The idea is to keep unprotected workers outside this boundary; inside, entry requires appropriate PPE and other protective controls. That's why this statement fits best: it describes reducing energy exposure to a safe level and staying out unless PPE or protective measures are in place. The other options describe things that aren't about the arc-flash boundary: a general clearance for passing around energized equipment, a tag identifying energized gear, or an area limited to supervisors.

10. What is the ampacity of #6 bare copper?

- A. 80
- B. 140**
- C. 160
- D. 190

Ampacity is the maximum continuous current a conductor can carry without its temperature rising enough to damage insulation or devices. That limit comes from the conductor size (AWG), the material, the insulation type and its temperature rating, and how the conductor is installed (ambient temperature, whether it's in a conduit, grouped with other conductors, etc). For a copper conductor, you look up the value in NEC tables and choose the column that matches the insulation's temperature rating. For a #6 bare copper conductor, the typical values you'd see in standard code tables are around 55 A in the 60°C column and about 65 A in the 75°C column. Bare conductors don't have a higher temperature rating from insulation, so the conservative figures usually apply. The numbers in the answer options (80, 140, 160, 190) don't match the standard single-conductor ampacities in those tables, so if a particular exam uses 140 A as the "ampacity," it's likely referring to a context that involves something other than a single bare #6 conductor (such as parallel conductors or a different table/assumption). In practice, always verify the exact table and temperature column for the installation conditions and remember that ampacity for a bare copper conductor is tied to those specified ratings, not just the wire size.

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://scegroundman.examzify.com>

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

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