

# Electrical Academy Level 1 Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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 unit of measurement for electrical resistance?**
  - A. Amperes**
  - B. Volts**
  - C. Ohms**
  - D. Watts**
  
- 2. A small subdivision into which large areas are divided to permit selective access while maintaining other zones secure defines what concept?**
  - A. Zone**
  - B. Partition**
  - C. Instance**
  - D. Region**
  
- 3. Where is the most common location to install a keypad?**
  - A. Inside the house**
  - B. At the back door**
  - C. Front entry door**
  - D. In the garage**
  
- 4. Which device trips when there is a difference between live and neutral currents?**
  - A. Overload protection via a fuse.**
  - B. Provides surge protection.**
  - C. Detects differences between live and neutral currents and trips to prevent shock.**
  - D. Controls the color of wires.**
  
- 5. Which of the following is typically NOT a characteristic of cloud computing?**
  - A. On-demand self-service**
  - B. Resource pooling**
  - C. Limited scalability**
  - D. Broad network access**

- 6. What is a short circuit?**
- A. A fault path with very low resistance causing excessive current.**
  - B. A circuit with an open switch.**
  - C. A device that converts AC to DC.**
  - D. A protective device that opens on fault.**
- 7. How should two 12-volt 7 amp hour batteries be connected for a 12-volt security system?**
- A. In series**
  - B. In parallel**
  - C. In a grid**
  - D. In tandem**
- 8. Alarm cables installed in a plenum rated ceiling must be what rating?**
- A. General**
  - B. Standard**
  - C. Fire-resistant**
  - D. Plenum**
- 9. If two 1.5-V alkaline batteries are connected in series in a TV remote, what total voltage do they supply?**
- A. 1.5 volts**
  - B. 3 volts**
  - C. 6 volts**
  - D. 4.5 volts**
- 10. What is the function of a GFCI outlet?**
- A. Provides overcurrent protection by interrupting excessive current.**
  - B. Maintains a constant voltage to outlets.**
  - C. Detects differences between live and neutral currents and trips to prevent shock.**
  - D. Acts as a power factor correction device.**

## Answers

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

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## **Explanations**

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## 1. What is the unit of measurement for electrical resistance?

- A. Amperes
- B. Volts
- C. Ohms**
- D. Watts

The unit of measurement for electrical resistance is Ohms. This unit is named after Georg Simon Ohm, a German physicist who formulated Ohm's Law, defining the relationship between voltage, current, and resistance in an electrical circuit. Resistance is a measure of how much a material opposes the flow of electric current, and it is fundamentally important in electronics and electrical engineering. Understanding resistance in Ohms is critical for calculating how components in a circuit will behave when a voltage is applied. The concept of resistance plays a crucial role in designing and analyzing circuits, as it influences both current flow and the efficiency of energy usage in electrical systems. Amperes measures the flow of electric current, Volts measures electric potential difference, and Watts measures electrical power. Each of these measurements relates to electrical systems but does not specifically quantify resistance. Thus, knowing that Ohms represent resistance helps clarify various electrical phenomena and their applications.

## 2. A small subdivision into which large areas are divided to permit selective access while maintaining other zones secure defines what concept?

- A. Zone**
- B. Partition
- C. Instance
- D. Region

The concept that describes a small subdivision into which larger areas are divided for selective access while keeping other zones secure is best defined as a "zone." Zones are specifically designed to manage access control and enhance security within a defined area. They allow for the organization of spaces based on usage or security level, creating boundaries that help to regulate who can enter or exit specific areas. This practice is commonly employed in various fields, including urban planning, security, and facility management, to optimize functionality and safety. While terms like "partition," "instance," and "region" might imply some form of subdivision, they don't convey the specific notion of managing secure access that "zone" embodies. A partition might suggest physical separation but lacks the context of access control. An instance refers to a specific occurrence or example and isn't relevant in this context. Meanwhile, a region typically denotes a broader area without the implication of selective access. Thus, the term "zone" most accurately captures the intended concept.

### 3. Where is the most common location to install a keypad?

- A. Inside the house
- B. At the back door
- C. Front entry door**
- D. In the garage

The front entry door is the most common location for installing a keypad because it serves as the main point of entry for a home. This location provides convenience and accessibility for residents and visitors alike, allowing for easy access without needing a traditional key. By placing the keypad at the front entry, it enhances security and can facilitate entry for guests through a simple code, while also allowing homeowners to monitor who enters and exits. Additionally, this positioning is ideal for integrating with other security systems, further strengthening the overall security design of the home. Other locations, while practical in certain contexts, do not offer the same level of visibility and accessibility as the front entry door.

### 4. Which device trips when there is a difference between live and neutral currents?

- A. Overload protection via a fuse.
- B. Provides surge protection.
- C. Detects differences between live and neutral currents and trips to prevent shock.
- D. Controls the color of wires.**

A device that trips when there is a difference between live and neutral currents is designed to detect leakage of current to earth. If all the current that leaves through the live conductor should return via the neutral, but some of it instead escapes to ground (for example through a person touching a live part), the currents in live and neutral become unbalanced. A residual current device senses this imbalance and quickly disconnects the circuit to reduce the risk of electric shock. This function is different from overload protection (which trips when current is too high) and from surge protection (which handles voltage spikes). It's also not related to changing wire colors. In short, the device's role is to monitor live versus neutral current and trip when they don't match to keep people safe.

5. Which of the following is typically NOT a characteristic of cloud computing?

- A. On-demand self-service
- B. Resource pooling
- C. Limited scalability**
- D. Broad network access

In the context of cloud computing, one of the defining characteristics is scalability, which allows users to quickly and easily increase or decrease their resources based on demand. Therefore, limited scalability contradicts the very essence of what cloud computing offers. On-demand self-service enables users to manage their resources without requiring human interaction with the service provider. Resource pooling allows multiple customers to share the same physical resources, optimizing efficiency. Broad network access refers to the fact that cloud services can be accessed from various devices with internet connectivity. These qualities highlight the flexibility and efficiency of cloud systems, making limited scalability out of line with typical cloud characteristics.

6. What is a short circuit?

- A. A fault path with very low resistance causing excessive current.**
- B. A circuit with an open switch.
- C. A device that converts AC to DC.
- D. A protective device that opens on fault.

A short circuit is a fault path with very low resistance that causes an excessive current to flow through the circuit. When the resistance provided by the path is tiny, Ohm's law ( $I = V/R$ ) means the current becomes extremely large, often leading to overheating, component damage, or tripping of protection devices. The other descriptions refer to scenarios that do not create a low-resistance fault path: an open switch stops current entirely; a device that converts AC to DC is a rectifier, not a fault; and a protective device that opens on fault is meant to interrupt the fault, not to form the fault path.

**7. How should two 12-volt 7 amp hour batteries be connected for a 12-volt security system?**

- A. In series
- B. In parallel**
- C. In a grid
- D. In tandem

For a 12-volt security system, connecting the two 12-volt batteries in parallel is the appropriate method. When batteries are connected in parallel, their voltage remains the same, which in this case is 12 volts, while their capacity in amp hours enhances. This means that connecting two 12-volt, 7 amp hour batteries in parallel will give you a total capacity of 14 amp hours (7 amp hours from each battery added together). This increased capacity is beneficial in security systems, as it allows for prolonged operation without requiring frequent recharging, ensuring that the system remains powered during outages or when demand is high. Maintaining the same voltage while boosting the available current capacity is crucial for devices designed to operate at a specific voltage, like a 12-volt security system. Connecting in series would double the voltage to 24 volts, which would be unsuitable for a 12-volt system, essentially making the batteries incompatible with the equipment. Other terms like "grid" or "tandem" do not refer to standard methods of battery connection and do not apply in this context. Thus, connecting in parallel is the best solution for a 12-volt security system utilizing these batteries.

**8. Alarm cables installed in a plenum rated ceiling must be what rating?**

- A. General
- B. Standard
- C. Fire-resistant
- D. Plenum**

Alarm cables installed in a plenum-rated ceiling must carry a plenum rating to ensure safety and compliance with building codes. Plenum spaces are areas used for air circulation for heating and air conditioning systems and are often found between the structural ceiling and the dropped ceiling in buildings. The materials used in these areas must meet specific fire safety standards since any fire could lead to smoke and toxic fumes spreading quickly through the air handling systems. Cables with a plenum rating are specifically designed to have a low smoke and flame spread characteristics, which minimizes the risk of fire hazards in these vital areas. Using cables that do not have this rating in a plenum space can lead to serious safety violations and increase fire risks since non-rated materials can contribute to fire spread and produce harmful fumes. Other options do not address the necessary requirements for materials utilized in plenum spaces. Cables labeled as "general," "standard," or "fire-resistant" may not necessarily meet the stricter conditions mandated for safety in plenum areas.

9. If two 1.5-V alkaline batteries are connected in series in a TV remote, what total voltage do they supply?

- A. 1.5 volts
- B. 3 volts**
- C. 6 volts
- D. 4.5 volts

When two 1.5-V alkaline batteries are connected in series, their voltages combine to increase the total voltage supplied to the device—in this case, a TV remote. In a series connection, the positive terminal of the first battery is connected to the negative terminal of the second battery, effectively creating a single path for electrical current while adding their voltages together. So, if each battery provides 1.5 volts, by placing them in series, you can simply add the two voltages together:  $1.5\text{ V} + 1.5\text{ V}$  equals 3 volts. This total voltage of 3 volts is what the remote control would utilize for operation. Therefore, the configuration of the batteries directly supports the total voltage calculation in a series arrangement.

10. What is the function of a GFCI outlet?

- A. Provides overcurrent protection by interrupting excessive current.
- B. Maintains a constant voltage to outlets.
- C. Detects differences between live and neutral currents and trips to prevent shock.**
- D. Acts as a power factor correction device.

A GFCI's job is to protect you from grounding faults by sensing any difference between the current in the hot and the neutral. Under normal use those currents match. If current leaks to ground—such as through a person touching a live surface in a wet area—the currents no longer balance. The GFCI detects this imbalance and trips, cutting power in a fraction of a second to prevent electric shock. This is distinct from devices that provide overcurrent protection (like a circuit breaker), those that regulate voltage, or those that improve efficiency by correcting power factor.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://electricalacadlv11.examzify.com>**

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

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