

ELECTRICIAN SCHOOL YEAR 1 PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

<https://electricianschoolyr1.examzify.com>



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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

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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. Another term for voltage is ____.**
 - A. Circuit
 - B. Current
 - C. Electromotive force (emf)
 - D. Resistance
- 2. What is the purpose of a Ground Fault Circuit Interrupter (GFCI)?**
 - A. To increase the voltage in a circuit
 - B. To serve as an insulator in high voltage applications
 - C. To de-energize a circuit when a current to ground exceeds a predetermined value
 - D. To prevent overheating of electrical devices
- 3. The primary mission of OSHA is to ensure what?**
 - A. Workers receive proper training
 - B. Employers maintain a safe workplace
 - C. Regulate industry standards
 - D. Provide jobs for apprentices
- 4. What is the primary subject of NEC Article 400?**
 - A. Wiring methods
 - B. Motor installation
 - C. Flexible cords and cables
 - D. Grounding methods
- 5. Mandatory and permissive rules are defined in which section of the NEC?**
 - A. NEC article 90
 - B. NEC article 100
 - C. NEC article 200
 - D. NEC article 300
- 6. What are Joules a measure of?**
 - A. Electric current
 - B. Voltage
 - C. Units of work
 - D. Power

- 7. What is the change in voltage across a component called?**
- A. Voltage increase
 - B. Voltage drop
 - C. Voltage rise
 - D. Voltage fall
- 8. What is an electromagnetic device used to control mechanical devices such as valves?**
- A. Motor
 - B. Transformer
 - C. Solenoid
 - D. Generator
- 9. How many hours of on-the-job learning are required in an apprenticeship program each year?**
- A. 500
 - B. 1,000
 - C. 1,500
 - D. 2,000
- 10. What should you always do before working on a live circuit?**
- A. Check voltage with a multimeter
 - B. Put on safety goggles
 - C. Wear insulated gloves
 - D. Disconnect power supply

Answers

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

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Explanations

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1. Another term for voltage is _____.

- A. Circuit
- B. Current
- C. Electromotive force (emf)**
- D. Resistance

Voltage is often referred to as electromotive force (emf), which emphasizes its role in driving electric current through a circuit. Electromotive force is a measure of the energy provided per charge by a power source, such as a battery or generator, and is crucial for understanding how electrical systems function. This term highlights the potential difference in electric potential energy between two points in an electrical circuit, which is a key concept in the study of electricity. In practical terms, when voltage is applied across a load, it causes current to flow, enabling the operation of various electrical devices. Understanding voltage as electromotive force helps students grasp the fundamental principles of electricity and the behavior of circuits.

2. What is the purpose of a Ground Fault Circuit Interrupter (GFCI)?

- A. To increase the voltage in a circuit
- B. To serve as an insulator in high voltage applications
- C. To de-energize a circuit when a current to ground exceeds a predetermined value**
- D. To prevent overheating of electrical devices

A Ground Fault Circuit Interrupter (GFCI) is designed to enhance safety by preventing electric shock hazards. Its primary function is to monitor the current flowing through the circuit and to detect any imbalances between the outgoing current and the returning current. If it senses a ground fault—meaning that the current is flowing through an unintended path to the ground, typically due to a fault in the insulation or exposure of wiring—it will quickly de-energize the circuit, usually within a fraction of a second. This rapid disconnection is crucial in situations where moisture is present, such as in bathrooms and kitchens, because it minimizes the risk of electric shock. By interrupting the circuit when the current to ground exceeds a specific threshold, the GFCI effectively provides a protection mechanism, significantly reducing the risk of serious injury or fatality due to electric shock. Understanding the purpose of a GFCI is essential for electricians, as it directly relates to safety standards in the installation and usage of electrical systems.

3. The primary mission of OSHA is to ensure what?

- A. Workers receive proper training
- B. Employers maintain a safe workplace**
- C. Regulate industry standards
- D. Provide jobs for apprentices

The primary mission of OSHA, which stands for the Occupational Safety and Health Administration, is to ensure that employers maintain a safe workplace for their employees. This means that OSHA sets and enforces safety and health standards to protect workers from hazards that could cause serious injuries or illnesses. By focusing on employer responsibilities, OSHA plays a critical role in creating regulations that require workplaces to implement safety measures, conduct regular inspections, and provide employees with a safe working environment. This mission supports not only the health and safety of workers but also promotes overall workplace productivity by reducing accidents and related costs. While proper training for workers, regulation of industry standards, and providing jobs for apprentices are important aspects of occupational safety and workforce development, the overarching goal of OSHA is fundamentally about ensuring the safety and health protections are in place and adhered to by employers.

4. What is the primary subject of NEC Article 400?

- A. Wiring methods
- B. Motor installation
- C. Flexible cords and cables**
- D. Grounding methods

The primary subject of NEC Article 400 is flexible cords and cables. This article outlines the requirements for the use, installation, and construction of flexible cords and cables, which are crucial in various electrical applications. Flexible cords are typically used for temporary connections, allowing for the flexibility necessary in dynamic or portable equipment settings. NEC Article 400 details safety measures, voltage ratings, and the appropriate applications of different types of flexible cords. Understanding these regulations helps electricians ensure that installations are compliant with safety standards, preventing potential hazards related to flexible wiring connections. The emphasis on the construction specifications and permissible uses aids professionals in selecting the right type of flexible cord for a particular job, ensuring both functionality and safety.

5. Mandatory and permissive rules are defined in which section of the NEC?

- A. NEC article 90**
- B. NEC article 100
- C. NEC article 200
- D. NEC article 300

Mandatory and permissive rules are defined in NEC Article 90, which serves as the introduction to the National Electrical Code (NEC). This article establishes the purpose of the code, which includes providing a standard for electrical installations that enhance safety. Within this context, mandatory rules are those that must be followed, while permissive rules provide additional options or alternatives. Understanding these distinctions is essential for compliance with the NEC and ensures that electrical systems are installed safely and effectively. The importance of Article 90 lies in its conceptual framework for interpreting the rest of the code, setting the stage for how to approach both mandatory and permissive requirements throughout subsequent articles.

6. What are Joules a measure of?

- A. Electric current
- B. Voltage
- C. Units of work**
- D. Power

Joules are indeed a measure of work or energy in the International System of Units (SI). Specifically, one joule is defined as the amount of energy transferred when a force of one newton is applied to move an object one meter in the direction of the force. This unit of measurement is crucial in various fields, including physics and electrical engineering, as it gives a quantifiable measure of energy transfer, which can occur in various forms such as mechanical work, thermal energy, and electrical energy. Understanding joules is fundamental when dealing with electrical systems because energy consumption, production, and efficiency are often measured in joules. It plays a significant role in calculations involving energy usage in electrical devices, where the relationship between power (measured in watts) and energy is expressed over time. The other options refer to different electrical concepts. Electric current measures the flow of electric charge, voltage represents the electric potential difference, and power quantifies the rate at which energy is used or converted. While these concepts are interrelated, they do not pertain to the specific measurement of energy that joules represent.

7. What is the change in voltage across a component called?

- A. Voltage increase
- B. Voltage drop**
- C. Voltage rise
- D. Voltage fall

The change in voltage across a component is known as a voltage drop. This term specifically refers to the reduction in voltage as electrical energy is used by the component, such as a resistor, in a circuit. When current flows through a component, some of the electrical energy is converted into other forms of energy, like heat or light, which results in a lower voltage being measured on the other side of the component compared to the side where the current enters. Understanding this concept is critical because it helps in analyzing and troubleshooting electrical circuits. For instance, if the voltage drop across components is too high, it may indicate that the component is malfunctioning or that there is excessive resistance, which can lead to inefficiencies or failures in the circuit.

8. What is an electromagnetic device used to control mechanical devices such as valves?

- A. Motor
- B. Transformer
- C. Solenoid**
- D. Generator

A solenoid is an electromagnetic device that converts electrical energy into mechanical motion. It consists of a coil of wire wound in the shape of a cylinder, and when an electric current passes through the coil, it generates a magnetic field. This magnetic field can then be used to move a metal plunger or rod within the coil, creating linear motion. This motion is particularly useful for controlling mechanical devices, such as valves, in various applications. When the solenoid is activated, it can either open or close a valve, allowing or stopping the flow of fluids within a system. The simplicity and efficiency of solenoids make them widely used in automated systems, where precise control of mechanical components is necessary. In contrast, motors are designed to provide rotational motion, transformers are used to change the voltage of electrical energy, and generators convert mechanical energy into electrical energy. These devices serve different purposes and do not function in the same way as solenoids when it comes to controlling mechanical devices directly. Hence, the correct choice is the solenoid.

9. How many hours of on-the-job learning are required in an apprenticeship program each year?

- A. 500
- B. 1,000
- C. 1,500
- D. 2,000**

An apprenticeship program for electricians typically requires around 2,000 hours of on-the-job learning each year. This hands-on experience is essential as it allows apprentices to apply theoretical knowledge in practical situations, working under the guidance of experienced electricians. The 2,000-hour requirement ensures that apprentices gain a comprehensive understanding of the trade, including installation, maintenance, and troubleshooting of electrical systems. This significant amount of time spent in the field is critical for developing the skills and confidence necessary to perform electrical work safely and effectively upon completion of the program. Understanding this requirement is vital for apprentices as they plan their training and career progression in the electrical field.

10. What should you always do before working on a live circuit?

- A. Check voltage with a multimeter
- B. Put on safety goggles
- C. Wear insulated gloves
- D. Disconnect power supply**

Prioritizing safety in electrical work is of utmost importance, and the most effective way to ensure your personal safety and the safety of others is to disconnect the power supply before starting any work on a circuit. By turning off the power at the circuit breaker or removing fuses, you eliminate the risk of electrical shock and create a safer work environment. Once the power is disconnected, you can safely perform maintenance or repairs without the immediate danger of electric shock. Other good safety practices, such as checking voltage with a multimeter, wearing safety goggles, and using insulated gloves, are indeed important, but they come after ensuring that the circuit is de-energized. If the power is still on, even the best safety gear can't protect you from potential electrical hazards. This makes disconnecting the power supply the essential first step before proceeding with any work on a live circuit.

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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://electricianschoolyr1.examzify.com>

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

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