

Colorado Journeyman Practice Exam (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

- 1. What is the function of a ground fault circuit interrupter (GFCI)?**
 - A. To switch circuits on and off**
 - B. To prevent electrical fires**
 - C. To cut power when it detects a fault**
 - D. To monitor electrical load**
- 2. What does the acronym "NEC" stand for?**
 - A. New Energy Code**
 - B. National Electric Council**
 - C. National Electrical Code**
 - D. North American Electrical Committee**
- 3. What feature must dry-type transformers have when installed outdoors?**
 - A. Standard enclosure**
 - B. Weatherproof enclosure**
 - C. Steel enclosure**
 - D. Insulated enclosure**
- 4. To what maximum percentage can splices and taps fill a surface nonmetallic raceway?**
 - A. 50 percent**
 - B. 60 percent**
 - C. 75 percent**
 - D. 90 percent**
- 5. What is the maximum number of No. 14 AWG THHN copper conductors allowed in 3/8-inch flexible metal conduit using external clamp-type fittings?**
 - A. 2 conductors**
 - B. 3 conductors**
 - C. 4 conductors**
 - D. 5 conductors**

- 6. Which component is essential for providing safety in wet locations when referring to electrical installations?**
- A. Fuse box**
 - B. GFCI protection**
 - C. Surge protector**
 - D. Distribution panel**
- 7. How many No. 4/0 THW copper conductors may be installed in a 2-1/2-inch EMT conduit nipple six inches long installed between a panel and a wireway?**
- A. 6 conductors**
 - B. 7 conductors**
 - C. 8 conductors**
 - D. 9 conductors**
- 8. What is the minimum height above finished grade for receptacles located outside?**
- A. 12 inches**
 - B. 18 inches**
 - C. 24 inches**
 - D. 36 inches**
- 9. What is a legal requirement for repairing an electrical code violation in Colorado?**
- A. Repairs must be inspected by an external authority**
 - B. Correction must be completed within a specified timeframe set by the code enforcement authority**
 - C. Repairs must only be documented**
 - D. Corrections may be postponed indefinitely**
- 10. Which of the following is typically required for outdoor wiring installations?**
- A. Standard plastic conduit**
 - B. Non-metallic sheathed cable**
 - C. Weather-resistant connectors**
 - D. Underground feeder cable**

Answers

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

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Explanations

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1. What is the function of a ground fault circuit interrupter (GFCI)?

- A. To switch circuits on and off**
- B. To prevent electrical fires**
- C. To cut power when it detects a fault**
- D. To monitor electrical load**

The ground fault circuit interrupter (GFCI) is specifically designed to enhance safety in electrical systems by cutting off power when it detects an imbalance in the electrical current. This imbalance typically indicates that some of the current is finding an unintended path to ground, which may occur in situations like a person accidentally touching a live wire or a faulty appliance. The GFCI continuously monitors the incoming and outgoing current and can react within milliseconds to stop the flow of electricity, thereby reducing the risk of electric shock and potentially preventing severe injury or fatality. This protective function is crucial in wet areas such as kitchens, bathrooms, and outdoor settings where the risk of shock is heightened. It is distinct from devices that merely switch circuits on and off, prevent electrical fires through circuit protection, or monitor load, each of which serves different safety and operational purposes in electrical systems.

2. What does the acronym "NEC" stand for?

- A. New Energy Code**
- B. National Electric Council**
- C. National Electrical Code**
- D. North American Electrical Committee**

The acronym "NEC" stands for the National Electrical Code. This widely recognized standard is published by the National Fire Protection Association (NFPA) and outlines the minimum requirements for safe electrical installations in residential, commercial, and industrial buildings across the United States. The NEC is regularly updated to include changes in technology, safety practices, and materials used in electrical work, making it essential for ensuring electrical systems are safe, reliable, and up to date. Understanding the NEC is crucial for anyone in the electrical trade as it provides guidelines on everything from wiring methods to grounding and bonding. Compliance with the NEC helps prevent electrical fires, shocks, and other hazards, which is crucial for the safety of both the workers and the general public.

3. What feature must dry-type transformers have when installed outdoors?

- A. Standard enclosure
- B. Weatherproof enclosure**
- C. Steel enclosure
- D. Insulated enclosure

When dry-type transformers are installed outdoors, they must have a weatherproof enclosure. This requirement is crucial because outdoor environments can expose transformers to a range of weather conditions, including rain, snow, wind, and temperature fluctuations. A weatherproof enclosure ensures that the transformer is protected from moisture and debris, which can lead to electrical failures or reduced efficiency. The integrity of the enclosure helps maintain the proper operation of the transformer and prolongs its lifespan by preventing corrosion and other environmental damage. In contrast, a standard enclosure might not offer the necessary protection against the elements, and while a steel enclosure could provide durability, it may not be inherently weatherproof without additional protective features. An insulated enclosure is important for electrical safety, but it does not specifically address the need to protect against weather conditions, which is the primary concern for outdoor installations.

4. To what maximum percentage can splices and taps fill a surface nonmetallic raceway?

- A. 50 percent
- B. 60 percent
- C. 75 percent**
- D. 90 percent

The maximum percentage that splices and taps can fill a surface nonmetallic raceway is designated as 60 percent according to the National Electrical Code (NEC). This guideline is established to ensure that there is sufficient room within the raceway for heat dissipation and to allow for potential future additions of conductors without violating space requirements. This percentage is crucial for maintaining safety and performance standards in electrical installations. Proper fill prevents overheating and ensures that all conductors can operate effectively without risk of damage due to overcrowding. The other options indicate higher percentages, which do not align with the NEC requirements for raceway fill, emphasizing the importance of adhering to the established standards for electrical systems. Understanding these specifications is key for ensuring compliance and the safe operation of electrical installations.

5. What is the maximum number of No. 14 AWG THHN copper conductors allowed in 3/8-inch flexible metal conduit using external clamp-type fittings?

- A. 2 conductors
- B. 3 conductors
- C. 4 conductors**
- D. 5 conductors

The question revolves around the conduit fill capacity, which is determined by the size of the conduit and the type and gauge of conductors being used. For 3/8-inch flexible metal conduit, the maximum number of conductors is calculated based on the NEC (National Electrical Code) requirements for conduit fill. When dealing with 14 AWG THHN copper conductors, each conductor occupies a specific amount of space within the conduit. The code provides tables to determine how many conductors can fit into a conduit without exceeding fill limits and ensuring the conductors can be safely installed. For a 3/8-inch flexible metal conduit, commonly used in various wiring applications, it can typically accommodate a specific number of conductors based on their size. The standard calculations reflect that up to four No. 14 AWG THHN conductors can fit safely within this conduit, allowing for proper heat dissipation and ease of installation. These calculations take into account the total cross-sectional area of the conductors and the minimum fill requirements to avoid overcrowding, thus leading to the conclusion that the maximum number of No. 14 AWG conductors allowed in a 3/8-inch flexible metal conduit, when using external clamp-type fittings, is indeed four.

6. Which component is essential for providing safety in wet locations when referring to electrical installations?

- A. Fuse box
- B. GFCI protection**
- C. Surge protector
- D. Distribution panel

GFCI protection is essential for ensuring safety in wet locations during electrical installations because it is designed to protect against electrical shock and electrocution that may occur in environments where moisture is present. Ground Fault Circuit Interrupters (GFCI) continuously monitor the flow of electricity and can quickly shut off the power if they detect an imbalance between incoming and outgoing current. This immediate interruption is crucial in wet areas where the risk of shock is elevated, such as bathrooms, kitchens, or outdoor settings. While other components like a fuse box, surge protector, or distribution panel are important for overall electrical system design and function, they do not specifically address the safety hazards presented by moisture. A fuse box is primarily for overcurrent protection, surge protectors help to protect equipment from voltage spikes, and a distribution panel manages the distribution of electrical power throughout a building. However, it is the GFCI's specific function of detecting ground faults that makes it integral to safety in wet locations.

7. How many No. 4/0 THW copper conductors may be installed in a 2-1/2-inch EMT conduit nipple six inches long installed between a panel and a wireway?

- A. 6 conductors**
- B. 7 conductors**
- C. 8 conductors**
- D. 9 conductors**

To determine how many No. 4/0 THW copper conductors can be installed in a 2-1/2-inch EMT conduit nipple that is six inches long, one must refer to the National Electrical Code (NEC) and the allowable conduit fill calculations. First, you need to find the maximum allowable fill for a 2-1/2-inch EMT conduit. According to NEC tables, the total cross-sectional area that can be occupied by conductors in a conduit can be calculated. Each No. 4/0 THW copper conductor has a specific area, which can be found in NEC tables. For No. 4/0 THW, the diameter is approximately 0.46 inches, which gives a cross-sectional area of about 0.167 square inches per conductor. The total cross-sectional area of a 2-1/2-inch EMT conduit is roughly 4.257 square inches. When calculating for conductor fill, according to NEC guidelines, you cannot exceed 40% of the conduit's cross-sectional area for more than 2 conductors. By applying this percentage, the fill calculation shows that you can fit approximately 9 conductors ($4.257 \text{ sq. in.} \times 0.4$).

8. What is the minimum height above finished grade for receptacles located outside?

- A. 12 inches**
- B. 18 inches**
- C. 24 inches**
- D. 36 inches**

The minimum height for receptacles located outside is established to ensure safety and functionality, particularly in relation to weather exposure. Placing these receptacles at least 18 inches above finished grade helps prevent water intrusion, which can lead to electrical shock hazards or damage to the equipment. This height is particularly important in areas where snow, rain, or flooding is a possibility, as it helps keep the receptacle above the risk of contact with water. While lower heights may seem convenient for accessibility, they increase the risk of hazardous situations. The 18-inch minimum ensures that receptacles are still accessible for use while minimizing potential electrical dangers stemming from inclement weather or standing water. This guideline is consistent with the National Electrical Code (NEC) requirements regarding outdoor receptacle installations.

9. What is a legal requirement for repairing an electrical code violation in Colorado?

- A. Repairs must be inspected by an external authority**
- B. Correction must be completed within a specified timeframe set by the code enforcement authority**
- C. Repairs must only be documented**
- D. Corrections may be postponed indefinitely**

In Colorado, addressing an electrical code violation involves legal requirements that emphasize the need for timely corrections. The correct answer, which states that the correction must be completed within a specified timeframe set by the code enforcement authority, reflects a crucial aspect of maintaining safety and compliance with electrical codes. When a violation is identified, the relevant authorities will often issue a notice that includes a deadline by which the necessary repairs must be made. This requirement ensures that unsafe conditions are promptly rectified, thereby protecting both property and public safety. Delaying repairs without a set timeframe could lead to prolonged hazards and potential legal consequences for the property owner or the electrician responsible. Taking timely action not only fulfills legal obligations but also demonstrates a commitment to adhering to safety standards. This urgency in compliance is a fundamental principle that helps ensure electrical systems are safe and functional, reducing risks of accidents or electrical failures. Being aware of this timeframe is crucial for anyone involved in electrical work or property management in Colorado. Adhering to these requirements protects the integrity of their work and the safety of those who use the electrical systems.

10. Which of the following is typically required for outdoor wiring installations?

- A. Standard plastic conduit**
- B. Non-metallic sheathed cable**
- C. Weather-resistant connectors**
- D. Underground feeder cable**

For outdoor wiring installations, the use of weather-resistant connectors is essential. These connectors are designed specifically to withstand the elements, including moisture, UV exposure, and temperature fluctuations, which are common in outdoor environments. They ensure a secure connection and prevent water ingress, which could potentially lead to short circuits, corrosion, and electrical hazards. In contrast, while standard plastic conduit, non-metallic sheathed cable, and underground feeder cable may be used in specific situations, they do not inherently offer the same level of protection against environmental factors as weather-resistant connectors. These other options provide structural protection or are suitable for certain types of installations, but they do not directly address the need for reliable, moisture-proof connectivity in outdoor settings like weather-resistant connectors do.

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://cojourneyman.examzify.com>

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