

NATIONAL ELECTRICAL CODE (NEC) ARTICLE 225 PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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	16

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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 must be provided if the disconnecting means does not disconnect the grounded conductor?**
 - A. A separate circuit breaker
 - B. Additional disconnecting means at the location
 - C. A terminal for attaching all grounded conductors
 - D. No additional equipment is needed

- 2. What is one of the required characteristics for sealants used where a raceway enters a building?**
 - A. Cost-effectiveness
 - B. Resistance to cold weather
 - C. Compatibility with cable insulation
 - D. Rapid drying time

- 3. Who is responsible for ensuring compliance with clearance requirements in an electrical installation?**
 - A. The electrical inspector
 - B. The contractor or installer
 - C. The building owner
 - D. The local utility company

- 4. What is NOT a method of testing protective relays as per NEC guidelines?**
 - A. Injecting different voltages at the outputs
 - B. Visual inspection for correct polarity
 - C. Using current injection to verify operation
 - D. Observing timing and sequencing during operation

- 5. What is the minimum width of a clear zone for fire ladders needed when buildings exceed certain heights?**
 - A. 1.2 m (4 ft)
 - B. 1.5 m (5 ft)
 - C. 1.8 m (6 ft)
 - D. 2.0 m (6.5 ft)

- 6. What is the minimum horizontal clearance required for final spans from windows designed to be opened?**
- A. 600 mm (2 ft)
 - B. 900 mm (3 ft)
 - C. 1.2 m (4 ft)
 - D. 1.8 m (6 ft)
- 7. Which conductors are permitted to be attached to a feeder and/or branch-circuit mast?**
- A. Any type of conductor
 - B. Only those specified within section 225.17
 - C. Only low-voltage conductors
 - D. Conductors approved by local codes
- 8. What does the presence of phase angles in relays indicate?**
- A. Voltage regulation standards.
 - B. The operational load conditions.
 - C. Routine maintenance checks.
 - D. Backup power supply readiness.
- 9. What is required to be delivered to the authority having jurisdiction before energization?**
- A. A test report covering the results of necessary tests.
 - B. A completed installation plan and drawing.
 - C. A list of all materials used.
 - D. An application for permit approval.
- 10. How much should clearances be increased for every 1 kV above 22 kV?**
- A. 1 mm
 - B. 2 mm
 - C. 4 mm
 - D. 10 mm

Answers

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

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Explanations

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1. What must be provided if the disconnecting means does not disconnect the grounded conductor?

- A. A separate circuit breaker
- B. Additional disconnecting means at the location
- C. A terminal for attaching all grounded conductors**
- D. No additional equipment is needed

In the context of the National Electrical Code (NEC), specifically regarding disconnecting means for circuits, if the disconnecting means does not disconnect the grounded conductor, it is crucial to provide a terminal for attaching all grounded conductors. This is to ensure proper termination and safe handling of the grounded conductors in the system. Grounded conductors are typically identified by their insulation color, and they must be managed adequately to minimize electrical hazards and to ensure that the grounding system remains effective. By providing a terminal designated for all grounded conductors, it allows for proper connection, organization, and potential isolation of these conductors when needed for maintenance, troubleshooting, or safety. This requirement helps maintain the integrity of the electrical system, ensuring compliance with safety standards. Other options do not address the specific need to manage the grounded conductor directly or would not meet the NEC requirements as effectively as providing the designated terminal would. This emphasizes the importance of clear and appropriate handling of grounded conductors within electrical installations, ultimately enhancing safety and reliability.

2. What is one of the required characteristics for sealants used where a raceway enters a building?

- A. Cost-effectiveness
- B. Resistance to cold weather
- C. Compatibility with cable insulation**
- D. Rapid drying time

The required characteristic for sealants used where a raceway enters a building is compatibility with cable insulation. This is crucial because the sealant must not adversely affect the insulation materials of the cables, ensuring that the integrity and performance of the electrical system are maintained. If a sealant is incompatible with the cable insulation, it could lead to degradation or damage over time, potentially resulting in electrical failures or hazards. In applications where raceways penetrate building envelopes, maintaining the integrity of both the raceway and the cable insulation is essential for safety, reliability, and long-term performance. Therefore, the compatibility of the sealant with the insulation plays a vital role in the selection process for materials used in these scenarios. While cost-effectiveness, resistance to cold weather, and rapid drying time might be considerations in some contexts, they do not address the imperative need for ensuring that the sealant does not interfere with cable insulation, which is a primary concern under the National Electrical Code standards.

3. Who is responsible for ensuring compliance with clearance requirements in an electrical installation?

- A. The electrical inspector
- B. The contractor or installer**
- C. The building owner
- D. The local utility company

In the context of electrical installations, the contractor or installer holds the primary responsibility for ensuring compliance with clearance requirements. This is critical because the installer must adhere to the National Electrical Code (NEC) and any local amendments that dictate how electrical systems should be placed and spaced in order to prevent hazards, ensure safety, and promote proper functioning of electrical equipment. The contractor or installer is in charge of interpreting design specifications, understanding the clearance rules, and implementing them accurately during the installation process. This includes maintaining proper distances from fixtures, structures, and other hazards to prevent issues such as overheating or electrical arcing, which could lead to fires and accidents. While electrical inspectors play a role in verifying compliance, their function is more about oversight and enforcement rather than execution. They inspect finished work, but it is the responsibility of the contractor or installer to ensure that the work meets all code requirements from the onset. The building owner may have some responsibility regarding the overall safety of the electrical system, but they typically rely on the expertise of the contractor or installer to achieve compliance with the NEC. Similarly, local utility companies focus on their infrastructure and service connections, rather than the internal clearance requirements dictated by installation practices.

4. What is NOT a method of testing protective relays as per NEC guidelines?

- A. Injecting different voltages at the outputs
- B. Visual inspection for correct polarity**
- C. Using current injection to verify operation
- D. Observing timing and sequencing during operation

The correct answer is based on the practices outlined in the NEC guidelines regarding the testing of protective relays. Protective relays serve crucial roles in the protection of electrical systems, and testing them is typically aimed at verifying their operational reliability and accuracy. Visual inspection for correct polarity, which is identified as the method that is NOT recognized as an appropriate testing method, pertains more to ensuring that the installation adheres to electrical codes and standards rather than a means of functional testing. While checking for correct polarity is important for ensuring safety and proper operation, it does not assess the operational effectiveness or responsiveness of the protective relay itself. In contrast, the other methods listed are actively utilized to assess the performance of protective relays. Injecting different voltages at the outputs allows for observing how the relay responds under various conditions. Using current injection is a technique that tests the relay's ability to react to overcurrent situations. Observing timing and sequencing during operation ensures that the relay responds within the required time frames and sequences as specified in its design. These methods are integral to demonstrating that the relays will function correctly in real-world scenarios, hence why they are accepted practices for testing protective relays as per NEC guidelines.

5. What is the minimum width of a clear zone for fire ladders needed when buildings exceed certain heights?

- A. 1.2 m (4 ft)
- B. 1.5 m (5 ft)
- C. 1.8 m (6 ft)**
- D. 2.0 m (6.5 ft)

The minimum width of a clear zone for fire ladders around buildings that exceed certain heights is 1.8 m (6 ft). This specification is essential because it ensures that emergency responders have adequate space to safely operate equipment and maneuver in emergencies. The clear zone is critical for preventing obstructions that could hinder ladder access or the operation of other crucial emergency equipment. Furthermore, maintaining a clear zone enhances safety not only for the firefighters and emergency personnel but also for building occupants during a rescue operation. Adhering to this requirement in the NEC ensures compliance with fire safety standards, ultimately protecting lives and property in case of an emergency.

6. What is the minimum horizontal clearance required for final spans from windows designed to be opened?

- A. 600 mm (2 ft)
- B. 900 mm (3 ft)**
- C. 1.2 m (4 ft)
- D. 1.8 m (6 ft)

The minimum horizontal clearance required for final spans from windows designed to be opened is crucial for ensuring safety and access. A requirement of 900 mm (3 ft) is established to prevent electrical conductors from being too close to windows, which could pose hazards if the window is opened. This clearance helps mitigate the risk of accidental contact with conductors, particularly when someone is reaching through or attempting to operate the window. Having a distance of 900 mm allows enough space to ensure that individuals and the electrical installations are kept safely apart. It aligns with the goal of the National Electrical Code (NEC) to enhance overall electrical safety in residential and commercial environments. Understanding this requirement is essential for both electricians and building designers to ensure that installations adhere to safety standards and regulations, ultimately reducing the risk of electrical incidents related to accessible openings in walls.

7. Which conductors are permitted to be attached to a feeder and/or branch-circuit mast?

- A. Any type of conductor
- B. Only those specified within section 225.17**
- C. Only low-voltage conductors
- D. Conductors approved by local codes

The correct choice stipulates that only specific types of conductors, as outlined in section 225.17 of the National Electrical Code, are permitted to be attached to a feeder and/or branch-circuit mast. Section 225.17 details the requirements for conductors that can be used in this context, emphasizing the importance of adherence to standardized practices for safety and functionality. This section ensures that the conductors installed are suitable for the anticipated electrical load, environmental conditions, and physical protection needed in such installations. Therefore, selecting conductors that conform to the specifics outlined in the NEC not only adheres to regulatory requirements but also promotes safety and efficiency in electrical distribution systems. In contrast, vague options such as allowing any type of conductor or solely low-voltage conductors would not ensure the necessary compliance and safety. Additionally, relying solely on local codes could lead to variability and potential safety issues, as local regulations might not align with the comprehensive standards set forth in the NEC.

8. What does the presence of phase angles in relays indicate?

- A. Voltage regulation standards.
- B. The operational load conditions.**
- C. Routine maintenance checks.
- D. Backup power supply readiness.

The presence of phase angles in relays is indicative of the operational load conditions within an electrical system. Phase angles refer to the phase difference between voltage and current waveforms, which can significantly affect the performance of electrical equipment. When analyzing electrical systems, understanding the phase angle helps in assessing how well the system is handling its load at any given time. For instance, in AC systems, the relationship between voltage and current can determine the power factor, which indicates whether the system is operating efficiently. A phase angle that shows current is leading or lagging the voltage can provide insights into the nature of the load—whether it is resistive, inductive, or capacitive. By assessing these phase angles, engineers and technicians can draw conclusions about the operational state of the load, leading to better management of power distribution and improved system reliability. This understanding is critical for performance monitoring and ensuring that loads are functioning within optimal parameters. Hence, the focus on operational load conditions is key, as it directly connects to the performance of relays and the overall efficacy of the electrical system.

9. What is required to be delivered to the authority having jurisdiction before energization?

- A. A test report covering the results of necessary tests.**
- B. A completed installation plan and drawing.
- C. A list of all materials used.
- D. An application for permit approval.

The correct answer highlights the importance of ensuring that electrical installations meet safety and performance standards before they are energized. A test report containing the results of necessary tests is critical as it provides evidence that the installation has been checked and conforms to applicable codes and standards. This report typically covers various aspects such as insulation resistance, continuity testing, and ground fault testing, ensuring that any potential issues are identified and addressed prior to allowing electrical power to flow through the system. Providing this documentation is a standard procedure to ensure safety and compliance, establishing a basis for the authority having jurisdiction to verify the installation's readiness for energization. The other options, while important in various contexts, do not specifically address the immediate requirement for verification of safety and performance standards prior to energization. A completed installation plan and drawing might be essential for project approval and planning, while a list of materials used might be useful for inventory and documentation purposes. An application for permit approval is important for legal compliance and initiation of the project but does not directly confirm that the installation is ready to be energized. Overall, the necessity for a test report emphasizes the priority of safety and adherence to the National Electrical Code requirements before the power is turned on.

10. How much should clearances be increased for every 1 kV above 22 kV?

- A. 1 mm
- B. 2 mm
- C. 4 mm
- D. 10 mm**

The correct increase in clearances for every 1 kV above 22 kV is 10 mm. This requirement is based on the principles established by the National Electrical Code (NEC) for maintaining safety measures and minimizing the risk of electrical hazards. As voltage levels increase, the potential for electrical discharge also rises, necessitating greater clearances to protect against arcing and unintended contact. The NEC specifies these clearances to ensure that installations are safe for both personnel and equipment. To comply with the NEC requirements and maintain safety standards, every additional kilovolt (kV) above 22 kV requires an increase of 10 mm in clearance distance. This systematic approach helps ensure the integrity of electrical systems and promote safety in environments with higher voltage levels.

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://necarticle225.examzify.com>

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

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