NORTH CAROLINA PUBLIC UTILITIES LICENSE PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. **What is the required burial depth for supply conductors or cables operating at 601 to 22,000 volts?**

   A. 24 inches

   B. 30 inches

   C. 36 inches

   D. 48 inches

2. **Which type of fuse links must fit into a 7/17-inch diameter hole?**

   A. 30 to 50 amp links

   B. 40 to 60 amp links

   C. 60 to 100 amp links

   D. 100 to 150 amp links

3. **What is the importance of high-frequency voltages in coupling capacitors?**

   A. To supply power to buildings

   B. To synchronize electrical systems

   C. To transmit communication signals

   D. To manage load balancing

4. **What is the function of slant cut and gable roof types on poles?**

   A. To increase wind resistance

   B. To prevent accumulation of water, snow, or ice

   C. To facilitate easier maintenance access

   D. To enhance structural support

5. **What is the primary use of wire tongs in electrical work?**

   A. To tighten cables

   B. To hold live conductors

   C. To cut wires

   D. To splice cables together

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6. What type of manholes are used for the protection of transformer and network protector equipment?

A. Large manholes

B. Standard manholes

C. Utility manholes

D. Inspection manholes

7. What is the purpose of ground wire molding?

A. To increase conductivity

B. To protect the wire and the lineman

C. To improve insulation

D. To reduce resistance

8. What is the approximate weight of the head of a hydraulically operated tool used for compression splicing?

A. 10 pounds

B. 15 pounds

C. 20 pounds

D. 25 pounds

9. In electrical systems, sagging of conductors is typically addressed during which phase?

A. Installation phase

B. Maintenance phase

C. Testing phase

D. Construction phase

10. Why is clearance important for service-drop wires in pedestrian areas?

A. To allow equipment access

B. To prevent accidental contact

C. To enhance visibility

D. To reduce electromagnetic interference

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Answers

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

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Explanations

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1. What is the required burial depth for supply conductors or cables operating at 601 to 22,000 volts?

A. 24 inches

B. 30 inches

C. 36 inches

D. 48 inches

The required burial depth for supply conductors or cables operating at 601 to 22,000 volts is 30 inches. This specification is established to ensure adequate protection of the conductors from accidental damage due to surface activities and to limit the risk of electrical hazards. The depth helps to minimize the likelihood of interference with existing utilities while allowing for safe installation procedures. Choosing a burial depth of 30 inches is crucial because it aligns with national electrical codes and safety practices, which aim to ensure that high-voltage lines are suitably protected. Conductors at this voltage level are typically used for utility distribution, so careful consideration of their placement in relation to the ground surface and proximity to other underground structures is essential for public safety and system reliability. In contrast, the other depth options either do not meet the necessary safety standards for this voltage range or are designed for lower voltage systems. Hence, understanding these regulations is vital for anyone involved in installations or assessments concerning public utilities.

2. Which type of fuse links must fit into a 7/17-inch diameter hole?

A. 30 to 50 amp links

B. 40 to 60 amp links

C. 60 to 100 amp links

D. 100 to 150 amp links

The correct answer pertains to the sizing specifications of fuse links in terms of their physical dimensions required for installation. A fuse link that needs to fit into a 7/17-inch diameter hole typically corresponds to the specifications for 60 to 100 amp links. This standard measurement is designed to ensure that the fuse fits securely in its designated location, allowing for effective electrical protection at the specified amperage range. Fuses are significant components in electrical systems as they prevent excessive current from flowing through the system, which can lead to overheating and potential fire hazards. The other ranges, while they do involve fuses, would not fit securely into a hole of that size based on industry standards. Specifically, 30 to 50 amp links and 40 to 60 amp links are generally designed for smaller diameters, while 100 to 150 amp links would require a larger diameter hole to accommodate their size and facilitate safe installation. Understanding these specifications is crucial for anyone working within electrical utilities in North Carolina, as ensuring the right fit and compatibility of components greatly impacts the safety and efficacy of electrical installations.

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3. What is the importance of high-frequency voltages in coupling capacitors?

A. To supply power to buildings

B. To synchronize electrical systems

C. To transmit communication signals

D. To manage load balancing

High-frequency voltages in coupling capacitors are particularly important for transmitting communication signals. This is because coupling capacitors allow AC signals, especially those at higher frequencies, to pass through while blocking DC components. In communication systems, data and voice signals often modulate at high frequencies, making coupling capacitors essential for ensuring these signals can be transmitted effectively without interference from the DC bias levels present in the circuit. By efficiently allowing high-frequency signals to pass, coupling capacitors facilitate the operation of audio and radio frequency circuits, enabling them to function properly and ensuring clear signal transmission. High-frequency voltages are thus vital in applications like audio amplifiers, radio transmitters, and other communication devices where signal integrity is crucial. The other options involve concepts not directly related to the function of coupling capacitors in high-frequency applications. For example, supplying power to buildings pertains more to power distribution rather than signal transmission, while synchronizing electrical systems typically involves control and timing mechanisms, and managing load balancing relates more to power management than to the transmission of communication signals.

4. What is the function of slant cut and gable roof types on poles?

A. To increase wind resistance

B. To prevent accumulation of water, snow, or ice

C. To facilitate easier maintenance access

D. To enhance structural support

The function of slant cut and gable roof types on poles is primarily to prevent the accumulation of water, snow, or ice. Roof designs that incorporate slant cuts or gable shapes create a slope that encourages precipitation to slide off rather than collect on the surface. This slope effectively minimizes the weight added by accumulations of snow or ice, which can lead to structural stress, potential collapse, or deterioration over time. While factors like wind resistance and maintenance access are important considerations in roof design, the specific shaping of slant cut and gable roofs directly addresses drainage and runoff issues. By ensuring that water doesn't pool, these roof types can maintain the longevity and integrity of the structure they protect. The ability to enhance structural support is also a benefit of a well-designed roof but is not the primary purpose of the slant cut and gable shapes when focusing specifically on drainage and runoff prevention.

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5. What is the primary use of wire tongs in electrical work?

A. To tighten cables

B. To hold live conductors

C. To cut wires

D. To splice cables together

The primary use of wire tongs in electrical work is to hold live conductors. Wire tongs are specifically designed tools that allow electricians to securely grip and manipulate electrical wires, especially when they are energized. This is crucial for safety, as it enables the worker to handle live wires without direct contact, reducing the risk of electric shock or accidents. In the context of electrical work, handling live conductors often requires special tools that provide insulation and grip. Wire tongs typically have insulating handles and a strong grip, making them ideal for this purpose. Using wire tongs helps maintain control over the conductors while minimizing exposure to dangerous electrical currents. Other tasks, such as tightening cables, cutting wires, or splicing cables together, require different tools. For instance, pliers or crimpers may be more suitable for tightening or splicing, while wire cutters are specifically designed for cutting wires.

6. What type of manholes are used for the protection of transformer and network protector equipment?

A. Large manholes

B. Standard manholes

C. Utility manholes

D. Inspection manholes

Large manholes are specifically designed to accommodate the size and requirements of transformer and network protector equipment, which are typically larger and more elaborate than standard equipment. These manholes provide adequate space for personnel to perform maintenance and inspections safely and effectively, minimizing the risk of accidents during their operations. In the context of utility management, large manholes offer additional benefits such as improved ventilation and accessibility, which are crucial for equipment that generates heat and may require regular diagnostic checks. For personnel working on transformers or network protectors, adequate workspace is essential to maneuver around the equipment without risking injury or damage. Other types of manholes, like standard, utility, or inspection manholes, may not provide the necessary dimensions or features needed for the specific requirements of transformer and network protector setups, potentially leading to restricted access or inadequate safety measures during maintenance activities.

7. What is the purpose of ground wire molding?

A. To increase conductivity

B. To protect the wire and the lineman

C. To improve insulation

D. To reduce resistance

The purpose of ground wire molding is primarily to protect both the wire and the lineman. Molding provides a physical barrier that shields the ground wire from environmental factors such as moisture, dirt, and mechanical damage, which can compromise the integrity of the electrical system. Additionally, this protective casing helps ensure the safety of linemen working on or around these wires by minimizing the risk of accidental contact with live components. While other answers may touch on aspects of electrical functionality, such as conductivity and insulation, those attributes are not the primary functions served by ground wire molding. The focus here is predominantly on safety and protection, making it crucial in ensuring the reliability and security of the electrical grid.

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8. What is the approximate weight of the head of a hydraulically operated tool used for compression splicing?

A. 10 pounds

B. 15 pounds

C. 20 pounds

D. 25 pounds

The approximate weight of the head of a hydraulically operated tool used for compression splicing is around 15 pounds. This weight is suitable to ensure that the tool can effectively perform its function without being overly cumbersome for the operator. Hydraulically operated tools are designed for specific tasks, such as compression splicing, and the weight is balanced to provide sufficient force while still allowing for maneuverability and ease of use. The weight consideration is crucial because a tool that is too light may not provide adequate force for compression, while one that is too heavy could lead to operator fatigue and decreased productivity. Therefore, a 15-pound head strikes a good balance, making it efficient for the application while allowing for comfortable handling during operation.

9. In electrical systems, sagging of conductors is typically addressed during which phase?

A. Installation phase

B. Maintenance phase

C. Testing phase

D. Construction phase

In electrical systems, the sagging of conductors is most appropriately addressed during the installation phase. This is crucial because the installation phase involves setting up the conductors at the correct tension and height to ensure optimal performance and safety. Proper sagging is essential to accommodate factors such as temperature variations and environmental influences, which can affect the length and flexibility of the conductors. During installation, engineers and technicians can calculate the required sag based on the span length, conductor weight, and environmental conditions. This ensures that the conductors will not sag excessively under load or due to thermal expansion, thus preventing possible hazards such as electrical shorts or line breaks. While maintenance is important for addressing issues that might arise over time, the actual setup of the sagging conductors is a consideration during the initial installation. The testing phase focuses on verifying operational functionality and safety after installation, and the construction phase deals with broader aspects such as overall structural integrity rather than specific details of conductor sagging.

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10. Why is clearance important for service-drop wires in pedestrian areas?

A. To allow equipment access

B. To prevent accidental contact

C. To enhance visibility

D. To reduce electromagnetic interference

Clearance for service-drop wires in pedestrian areas is crucial primarily to prevent accidental contact. This clearance ensures that individuals walking or moving in these areas are not at risk of inadvertently touching the wires, which could lead to severe injuries or fatalities due to electrical shocks. Maintaining proper height and distance from pedestrian pathways minimizes the possibility of contact, especially during activities such as reaching up to secure an object, or if a person is tall enough to come into contact with the wires. While allowing equipment access is important for maintenance activities, it does not specifically address the safety of pedestrians. Enhancing visibility might seem relevant, but it does not fundamentally protect individuals from the dangers posed by low-hanging wires. Similarly, reducing electromagnetic interference relates to electrical performance rather than pedestrian safety. The primary goal in providing appropriate clearance is to ensure a safe environment for pedestrians against the risks associated with service-drop wires.

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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:

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

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