

# NATIONAL ELECTRICAL CODE (NEC) ARTICLE 680 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.

# 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. Which of the following is a characteristic of double-insulated motors in hydromassage bathtubs?**
  - A. They require bonding
  - B. They are exempt from bonding
  - C. They have low power consumption
  - D. They are installed externally only
- 2. Which type of receptacle is permitted within 10 feet of a pool?**
  - A. Standard household receptacles
  - B. GFCI-protected receptacles only
  - C. Any type of outdoor receptacle
  - D. Receptacles with surge protectors
- 3. What is required for the installation of heating equipment in pool areas according to NEC Article 680?**
  - A. They must be installed without GFCI protection
  - B. They should be placed close to the water surface
  - C. They must be GFCI protected and installed per manufacturer guidelines
  - D. They are not necessary in heated pools
- 4. What safety measures are necessary for temporary electrical supplies near pools?**
  - A. They should be left on the ground
  - B. Conductors must be raised and protected to prevent water exposure
  - C. Temporary supplies can have bare conductors
  - D. Only outdoor-rated cords are sufficient
- 5. What is the minimum distance that an emergency shutoff switch must be located from the spa or hot tub?**
  - A. 3 ft
  - B. 5 ft
  - C. 6 ft
  - D. 10 ft

- 6. What is the purpose of making sure pool equipment disconnects are accessible?**
- A. To facilitate regular maintenance
  - B. To improve aesthetic appeal
  - C. To facilitate quick shut-off in emergencies
  - D. To enhance functionality of the equipment
- 7. Which of the following is not a responsibility of installers of hydromassage bathtubs?**
- A. Ensuring safe electrical connections
  - B. Conducting regular water quality tests
  - C. Validating correct bonding practices
  - D. Meeting NEC requirements
- 8. Why is it necessary to use a Ground Fault Circuit Interrupter (GFCI) for pool electrical installations?**
- A. To ensure better energy efficiency
  - B. To protect against electrical shock hazards
  - C. To prevent equipment damage
  - D. To assist in water circulation maintenance
- 9. Which of the following describes the bonding method for pool electrical equipment?**
- A. It must be temporary
  - B. Using bare aluminum conductors
  - C. Using solid copper conductors, insulated or bare
  - D. Only using covered conductors
- 10. How are "storable swimming pools" defined in NEC Article 680?**
- A. Pools that are permanently installed
  - B. Pools that can be filled with water and used seasonally
  - C. Pools that can be readily disassembled to return to a flat condition
  - D. Pools with rigid walls

## **Answers**

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

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## **Explanations**

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**1. Which of the following is a characteristic of double-insulated motors in hydromassage bathtubs?**

- A. They require bonding
- B. They are exempt from bonding**
- C. They have low power consumption
- D. They are installed externally only

*Double-insulated motors are designed with enhanced insulation to prevent electric shock, which allows them to operate safely without the need for a grounding conductor or bonding. This characteristic is particularly relevant in applications like hydromassage bathtubs, where water is present and electrical safety is paramount. The absence of a requirement for bonding is a crucial aspect of double insulation, distinguishing these motors from other types that may require bonding to ensure safety. In contrast, the other options reflect requirements or characteristics that do not pertain to double-insulated motors. For example, while bonding might be required for other types of motors or electrical installations to prevent electrical shock, double-insulated motors do not fall under this requirement due to their construction and inherent safety features. Additionally, low power consumption or the installation location of the motors does not directly define the essence of double insulation. Thus, the correct answer emphasizes the exemption from bonding as a primary and distinctive feature of double-insulated motors.*

**2. Which type of receptacle is permitted within 10 feet of a pool?**

- A. Standard household receptacles
- B. GFCI-protected receptacles only**
- C. Any type of outdoor receptacle
- D. Receptacles with surge protectors

*The reason GFCI-protected receptacles are the only type permitted within 10 feet of a pool is grounded in safety regulations established by the National Electrical Code (NEC). Pool areas are considered wet locations where the potential for electric shock is significantly heightened due to the proximity of water. GFCI (Ground Fault Circuit Interrupter) devices are specifically designed to prevent electrical shock by cutting off the electrical supply when they detect an imbalance in the electrical current, which can be caused by a short circuit or ground fault. By requiring that only GFCI-protected receptacles be installed within a certain distance of a pool, the NEC aims to minimize the risk of electric shock to individuals using the pool or being in its vicinity. This particular code is a crucial safety measure, as it significantly reduces the chances of electrical accidents in environments where people are likely to be wet and more susceptible to electric shock. In contrast, standard household receptacles lack this protective feature, making them unsuitable for use near pools. Outdoor receptacles may be weatherproof, but without GFCI protection, they still pose a safety risk. Receptacles equipped with surge protectors provide benefits against power surges but do not enhance personal safety in wet locations like swimming pools.*

### 3. What is required for the installation of heating equipment in pool areas according to NEC Article 680?

- A. They must be installed without GFCI protection
- B. They should be placed close to the water surface
- C. They must be GFCI protected and installed per manufacturer guidelines**
- D. They are not necessary in heated pools

*The requirement for the installation of heating equipment in pool areas according to NEC Article 680 emphasizes the importance of safety standards designed to protect users from electrical hazards. Specifically, heating equipment must be GFCI (Ground Fault Circuit Interrupter) protected to ensure that in case of any electrical fault, the power can be interrupted quickly, preventing potential electric shock incidents. Additionally, following the manufacturer's guidelines provides crucial information about safe and effective installation practices that are tailored to each specific piece of equipment. These guidelines typically include installation distances, mounting heights, and environmental considerations that are critical for both functionality and safety in a wet environment like a pool area. The requirement for GFCI protection and adherence to these guidelines reflects the NEC's ongoing commitment to safety in residential and commercial aquatic facilities, ensuring that all electrical installations minimize risks associated with water and electricity. This comprehensive approach is essential for maintaining a secure environment for pool users.*

### 4. What safety measures are necessary for temporary electrical supplies near pools?

- A. They should be left on the ground
- B. Conductors must be raised and protected to prevent water exposure**
- C. Temporary supplies can have bare conductors
- D. Only outdoor-rated cords are sufficient

*The requirement for temporary electrical supplies near pools to have conductors that are raised and protected from water exposure is based on the inherent risks associated with water and electricity. Water is a conductive medium, and in environments like swimming pools where moisture is prevalent, the chances of electrical shock or equipment damage increase significantly if electrical conductors are improperly positioned. By ensuring that conductors are elevated and protected, the risk of accidental contact with water or pooling around the conductors is minimized, thereby enhancing safety for individuals using the pool area. This measure complies with NEC guidelines that prioritize safety in wet locations. The other choices do not meet the necessary safety standards. Leaving conductors on the ground can lead to direct exposure to water, which poses a significant hazard. The presence of bare conductors would also create an extreme risk of electric shock, especially in a wet environment. Finally, while outdoor-rated cords are important for general use, they alone do not provide sufficient protection against the specific hazards present near pools without appropriate elevation and protection measures.*

**5. What is the minimum distance that an emergency shutoff switch must be located from the spa or hot tub?**

- A. 3 ft
- B. 5 ft**
- C. 6 ft
- D. 10 ft

*The minimum distance that an emergency shutoff switch must be located from the spa or hot tub is indeed 5 feet. This requirement is in place to ensure that individuals can safely access the emergency shutoff switch without risking electrical shock or injury from the water or any components associated with the spa or hot tub. Locating the emergency shutoff switch at least 5 feet away allows users to quickly disable the power in case of an emergency while minimizing their exposure to hazardous conditions. This distance also aligns with safety guidelines that protect users and establish effective means of emergency response. Understanding the rationale behind this requirement is crucial, as it helps to reinforce the importance of safety measures around body of water installations, ensuring that both water and electricity, which can be a dangerous combination, are kept at a safe distance from user areas.*

**6. What is the purpose of making sure pool equipment disconnects are accessible?**

- A. To facilitate regular maintenance
- B. To improve aesthetic appeal
- C. To facilitate quick shut-off in emergencies**
- D. To enhance functionality of the equipment

*The purpose of ensuring that pool equipment disconnects are accessible is primarily to facilitate quick shut-off in emergencies. Having easy access to disconnects allows individuals to quickly turn off electrical power to the pool equipment if there is a hazardous situation, such as an electrical fault or flood. This rapid response can significantly mitigate risks related to electrical shock or equipment malfunction, protecting both equipment and individuals in the vicinity. While regular maintenance is important, it is not the primary reason for accessibility; rather, quick emergency response is critical in preventing accidents or injuries. Enhancing aesthetic appeal and functionality of equipment does not relate to safety protocols required by the National Electrical Code. The NEC prioritizes safety, particularly in environments where water and electricity coexist, underscoring the necessity of prompt access to control equipment during emergencies.*

**7. Which of the following is not a responsibility of installers of hydromassage bathtubs?**

- A. Ensuring safe electrical connections
- B. Conducting regular water quality tests**
- C. Validating correct bonding practices
- D. Meeting NEC requirements

*The responsibility of installers of hydromassage bathtubs primarily revolves around ensuring that the electrical aspects and safety features are appropriately integrated into the installation. This includes ensuring safe electrical connections to avoid hazards such as electrical shock, conducting proper bonding to meet the grounding requirements, and adhering to the National Electrical Code (NEC) regulations to promote safety. Conducting regular water quality tests, however, falls outside the scope of the installers' responsibilities. Regular water quality testing typically pertains to maintenance and operation, which is the responsibility of the owner or service personnel who manage the ongoing use of the hydromassage bathtub. The primary focus for installers during the setup is on installation practices rather than the subsequent health and safety checks of the bath water itself. Therefore, this context emphasizes that ensuring water quality is not a part of the installation responsibilities.*

**8. Why is it necessary to use a Ground Fault Circuit Interrupter (GFCI) for pool electrical installations?**

- A. To ensure better energy efficiency
- B. To protect against electrical shock hazards**
- C. To prevent equipment damage
- D. To assist in water circulation maintenance

*Using a Ground Fault Circuit Interrupter (GFCI) for pool electrical installations is essential primarily for protection against electrical shock hazards. Water and electricity can create dangerous situations, especially in environments like swimming pools where individuals are often wet and in close proximity to electrical equipment. GFCIs are designed to detect imbalances in electrical current, which may occur if a person comes into contact with an electrical source, enabling the device to cut off the power quickly. This rapid response significantly reduces the risk of electrocution, thus safeguarding the users of the pool. The other options may not directly relate to the primary function of a GFCI. For instance, energy efficiency or equipment damage prevention does not encompass the core safety concern that the GFCI addresses. While maintaining water circulation might be relevant to pool maintenance, it does not relate to the electrical safety provided by GFCIs. Therefore, the main purpose of incorporating a GFCI in pool electrical installations is centered around safety from electrical shock hazards.*

**9. Which of the following describes the bonding method for pool electrical equipment?**

- A. It must be temporary
- B. Using bare aluminum conductors
- C. Using solid copper conductors, insulated or bare**
- D. Only using covered conductors

*The correct answer is based on the National Electrical Code (NEC) requirements for bonding pool electrical equipment, specifically stating that bonding should be performed using solid copper conductors, which can be either insulated or bare. This method is favored because copper exhibits excellent conductivity and resistance to corrosion, making it reliable for providing continuous grounding and bonding necessary for safety in wet environments, such as around swimming pools. Using solid copper conductors ensures that any electrical faults can be effectively grounded, minimizing the risk of electric shock or equipment damage. Insulated conductors may be used to provide additional protection against corrosion, while bare conductors allow for easy connection and conductivity. In contrast, temporary bonding methods or non-conductive materials like aluminum are not considered safe or compliant with NEC requirements for permanent installations. Covered conductors, while useful in some applications, do not fulfill the specific NEC bonding requirements as effectively as copper conductors do for pool equipment, which necessitates connections that are both reliable and enduring in wet conditions.*

**10. How are "storable swimming pools" defined in NEC Article 680?**

- A. Pools that are permanently installed
- B. Pools that can be filled with water and used seasonally
- C. Pools that can be readily disassembled to return to a flat condition**
- D. Pools with rigid walls

*In NEC Article 680, "storable swimming pools" are defined as pools that can be readily disassembled to return to a flat condition. This definition emphasizes the temporary nature of storable pools and their ability to be taken down and stored when not in use. This characteristic differentiates them from permanent installations, which typically have fixed structures, and ensures that their installation and electrical safety requirements can be adjusted accordingly. Understanding this definition is crucial because it impacts the electrical safety considerations and installation requirements laid out by the NEC for different types of pools. Storable pools are more flexible in terms of usage and placement, which is why specific code requirements will apply to them compared to permanently installed or rigid-wall pools.*

## 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:

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

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