

# Independent Electrical Contractors (IEC) Year 2 Part 2 Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

**Copyright © 2025 by Examzify - A Kaluba Technologies Inc. product.**

**ALL RIGHTS RESERVED.**

**No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.**

**Notice: Examzify makes every reasonable effort to obtain from reliable sources accurate, complete, and timely information about this product.**

**SAMPLE**

## **Questions**

SAMPLE

- 1. Which article of the NEC would you consult for information on grounded conductors?**
  - A. Article 100**
  - B. Article 200**
  - C. Article 225**
  - D. Article 510**
- 2. What is the minimum depth of concrete required to cover a conduit containing service entrance conductors beneath a building for it to be considered "outside"?**
  - A. 1 inch**
  - B. 2 inches**
  - C. 3 inches**
  - D. 4 inches**
- 3. When might accident prevention tags be necessary in the workplace?**
  - A. When employees are on break**
  - B. When performing routine checks**
  - C. When there are potential electrical hazards**
  - D. All the time**
- 4. According to the NEC®, how many receptacles are required in a 63-foot long office building hallway?**
  - A. One**
  - B. Two**
  - C. None**
  - D. Three**
- 5. What is the purpose of using insulated tools when working near energized conductors?**
  - A. To increase productivity**
  - B. To prevent electrical shock**
  - C. To improve visibility**
  - D. To facilitate faster repairs**

- 6. What is the term used in the NEC® to refer to the "hot" conductor of a circuit?**
- A. Grounded**
  - B. Neutral**
  - C. Ungrounded**
  - D. Isolated**
- 7. Type 3 surge protective devices must be installed at least how far from the main distribution panel?**
- A. 50 feet**
  - B. 100 feet**
  - C. 150 feet**
  - D. 200 feet**
- 8. What is the minimum size of copper wire permitted as a main bonding jumper in a 200-A main breaker panelboard?**
- A. 2 AWG**
  - B. 4 AWG**
  - C. 6 AWG**
  - D. 8 AWG**
- 9. Can the installation shown in Figure 208.1, where the box is only supported by conduits, be permitted by NEC®?**
- A. Yes**
  - B. No**
  - C. Only in certain conditions**
  - D. Depends on the conduit type**
- 10. What is the minimum threshold for a load that necessitates the installation of a feeder?**
- A. 200 amps**
  - B. 400 amps**
  - C. 600 amps**
  - D. 800 amps**

## **Answers**

SAMPLE

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

SAMPLE

## **Explanations**

SAMPLE

**1. Which article of the NEC would you consult for information on grounded conductors?**

- A. Article 100
- B. Article 200**
- C. Article 225
- D. Article 510

The correct choice for consulting information on grounded conductors is Article 200 of the NEC (National Electrical Code). This article specifically addresses various aspects related to grounded conductors, including their definitions, requirements, and installation practices. Grounded conductors, often referred to as neutral conductors, are critical in electrical systems for establishing a reference point for grounding and ensuring safety. Article 200 ensures that these conductors are properly identified and utilized within electrical installations, outlining the necessary precautions and specifications. This information is essential for maintaining compliance with safety regulations and for the proper functioning of electrical systems. While the other articles have their relevance to different topics within the NEC, they do not focus specifically on grounded conductors. Article 100 covers definitions and terminology, Article 225 pertains to outside feeders and branch circuits, and Article 510 relates to electrical requirements for hazardous locations. Therefore, for a detailed understanding of grounded conductors, Article 200 is the appropriate reference.

**2. What is the minimum depth of concrete required to cover a conduit containing service entrance conductors beneath a building for it to be considered "outside"?**

- A. 1 inch
- B. 2 inches**
- C. 3 inches
- D. 4 inches

The minimum depth of concrete required to cover a conduit containing service entrance conductors beneath a building is specified in the National Electrical Code (NEC). For the conductors to be considered "outside," they must be buried to a depth that provides adequate physical protection against damage, as well as proper insulation from moisture and other environmental factors. The requirement of 2 inches is established to ensure that the concrete acts as a protective covering. This depth is considered sufficient to prevent potential physical damage to the conduit from foot traffic or other loads that might be applied to the surface of the concrete. The concrete also helps in protecting the integrity of the conduit and the conductors it houses by shielding them from water infiltration and other environmental hazards typically present in underground installations. Understanding this standard helps ensure safety and compliance with electrical code requirements, which are in place to reduce the risk of electrical hazards and improve the overall reliability of the electrical system beneath structures.

**3. When might accident prevention tags be necessary in the workplace?**

- A. When employees are on break**
- B. When performing routine checks**
- C. When there are potential electrical hazards**
- D. All the time**

Accident prevention tags are essential when there are potential electrical hazards present in the workplace because they serve as a clear indication that specific safety precautions need to be observed. These tags are crucial for ensuring that workers are aware of the dangers and can take appropriate actions to mitigate risks associated with electrical components or setups that may pose a threat to their safety. The use of these tags can help to prevent accidents or incidents that could result from accidental contact with energized components or failure to follow safety protocols. They provide visual warnings to everyone in the area, ensuring that only trained individuals approach or work on energized equipment. This is especially important in environments where electrical work occurs frequently, as it promotes a culture of safety and reinforces the importance of adhering to safety procedures around known hazards.

**4. According to the NEC®, how many receptacles are required in a 63-foot long office building hallway?**

- A. One**
- B. Two**
- C. None**
- D. Three**

In a 63-foot long office building hallway, the requirement for receptacles is based on the National Electrical Code (NEC) which outlines specific guidelines for outlet placement. According to NEC, for hallways that are longer than 10 feet, at least one receptacle should be installed for every 100 feet or fraction thereof, but this is generally applicable to hallways adjusted appropriately for their use and code specifics. In this scenario, since the hallway is only 63 feet long, it does not meet the threshold that requires a receptacle to be installed. Therefore, the determination that no receptacles are required in this specific instance aligns with the NEC provisions for this length, emphasizing that hallways shorter than 100 feet do not necessitate receptacle installations unless specified by different local codes. This context clarifies why the correct answer indicates that no receptacles are necessary for a hallway of this length.

**5. What is the purpose of using insulated tools when working near energized conductors?**

- A. To increase productivity**
- B. To prevent electrical shock**
- C. To improve visibility**
- D. To facilitate faster repairs**

Using insulated tools when working near energized conductors serves to prevent electrical shock, which is a critical safety measure in electrical work. Insulated tools are designed with non-conductive materials that can withstand high voltage levels, providing a protective barrier between the worker and the electrical current. This protection reduces the risk of accidental contact with live conductors, which could otherwise lead to serious injuries or fatalities. The importance of this safety measure cannot be overstated, as electrical shock can not only harm the individual working on the system but can also lead to wider safety hazards, including falls or other accidents in the vicinity. By using insulated tools, electricians enhance their safety while performing tasks that require close proximity to energized components.

**6. What is the term used in the NEC® to refer to the "hot" conductor of a circuit?**

- A. Grounded**
- B. Neutral**
- C. Ungrounded**
- D. Isolated**

In the National Electrical Code (NEC), the term "ungrounded" is used to refer to the "hot" conductor of a circuit. This designation means that the conductor carries current and is not connected to the ground, making it capable of being at a higher voltage relative to ground potential. In most electrical systems, ungrounded conductors are the ones that deliver power to loads, whereas grounded and neutral conductors serve different roles in the system. The grounded conductor refers to the neutral, which is intended to carry current only under normal operation. In contrast, the ungrounded conductor can be energized and should be treated with caution as it poses a shock hazard. The term "isolated" does not apply in this context, as it typically relates to conductors or systems designed to prevent unintended connections or interactions. Understanding these terms and their implications in electrical safety and design is crucial for anyone working in the electrical field.

**7. Type 3 surge protective devices must be installed at least how far from the main distribution panel?**

- A. 50 feet**
- B. 100 feet**
- C. 150 feet**
- D. 200 feet**

Type 3 surge protective devices (SPDs) are designed to be installed at the service entrance or, in some cases, near the equipment being protected. These devices are intended to protect against transients from external sources, such as lightning or utility switching, as well as smaller transients from electrical devices within the installation. The requirement for a minimum distance from the main distribution panel, which is set at 100 feet, is based on practical and safety considerations. This distance helps ensure that the surge protective devices can adequately protect sensitive equipment without significant risk of voltage rise due to impedance in conductors. When SPDs are installed too close to the main panel, they may not be effective in preventing the transmission of electrical surges to downstream devices, which could result in damage. Installing the Type 3 SPDs at least 100 feet away from the main distribution panel allows for a broader electrical protection zone, ensuring that harmful transients are mitigated before they reach sensitive equipment. It also reduces the risk of back feed issues and enhances the overall effectiveness of the surge protection system. In summary, the specification that Type 3 surge protective devices must be installed at least 100 feet from the main distribution panel is designed to optimize their functionality and ensure reliable protection against

**8. What is the minimum size of copper wire permitted as a main bonding jumper in a 200-A main breaker panelboard?**

- A. 2 AWG**
- B. 4 AWG**
- C. 6 AWG**
- D. 8 AWG**

The minimum size of copper wire permitted as a main bonding jumper in a 200-A main breaker panelboard is 4 AWG. This requirement ensures adequate conductivity and safety when establishing a reliable electrical connection between the grounded system and the grounding electrode conductor. In the context of electrical systems, bonding is essential for reducing voltage differences that could lead to shock hazards or equipment damage. The National Electrical Code (NEC) outlines specific wire sizes based on the ampacity and application to ensure that the bonding jumper can handle fault currents without overheating or failing. Using a bonding jumper of at least 4 AWG copper helps to meet these standards effectively within a 200-A panel setting. This ensures not only compliance with safety regulations but also optimizes the integrity of electrical systems, which is critical for both performance and safety. While other sizes like 2 AWG might also be viable, they exceed the minimum requirement stipulated for this scenario.

**9. Can the installation shown in Figure 208.1, where the box is only supported by conduits, be permitted by NEC®?**

**A. Yes**

**B. No**

**C. Only in certain conditions**

**D. Depends on the conduit type**

The installation of a box that is only supported by conduits is generally not permitted by the National Electrical Code (NEC®). The code requires that electrical boxes must be adequately supported to ensure safety and reliability in electrical systems. When a box is solely dependent on conduits for support, it might not provide sufficient stability, particularly in situations where the electrical connections may experience stress due to movement, thermal expansion, or weight loading. The NEC has specific requirements for the support of boxes which state that they need to be secured independently from conduits if they do not meet certain support criteria. While conduits can help support boxes under specific conditions, such as where the box is also attached to a structural member or if it's a type of conduit that provides adequate mechanical strength, relying solely on them is generally not compliant. Understanding these safety requirements is vital for proper installation practices and ensuring that all electrical components are securely mounted, which is critical to prevent accidents, electrocution, or other hazards that can arise from improperly supported electrical installations.

**10. What is the minimum threshold for a load that necessitates the installation of a feeder?**

**A. 200 amps**

**B. 400 amps**

**C. 600 amps**

**D. 800 amps**

The correct answer reflects the requirement for a feeder based on the typical thresholds established in the National Electrical Code (NEC) and standard practices in electrical systems. A feeder serves as the conduit through which power is distributed from the service equipment to different branch circuits, and it is crucial for it to handle sufficient load capacity. In many jurisdictions, a minimum threshold of 800 amps is often considered the point where a feeder becomes necessary to ensure safe and efficient delivery of electrical power. This threshold is significant because loads that exceed this capacity require careful planning regarding the feeder's size, type, and protective measures to handle the larger electrical demand safely. When considering lower amp thresholds, such as 200, 400, or even 600 amps, these are typically not the minimum requirements for feeder installation in larger commercial or industrial setups. Instead, they may refer to branch circuit sizes or specific applications rather than the feeder's minimum capacity. Understanding these requirements is crucial for compliance with electrical codes and ensuring safety in electrical installations.