

LOAD CALCULATIONS – FEEDERS AND SERVICES (26401) PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE**

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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 is the load calculated for a laundry circuit?**
 - A. 1200VA
 - B. 1500VA
 - C. 2000VA
 - D. 1000VA

- 2. What is the primary purpose of conducting load calculations in electrical systems?**
 - A. To determine the electrical load requirements to ensure safety and efficiency
 - B. To calculate the cost of electricity for a facility
 - C. To assess the environmental impact of power generation
 - D. To compare different energy suppliers

- 3. What is the primary purpose of a load bank test?**
 - A. To measure power consumption
 - B. To simulate an electrical load
 - C. To assess energy efficiency
 - D. To evaluate safety protocols

- 4. What is the definition of service-entrance conductors?**
 - A. Conductors that carry electricity within the building
 - B. Conductors that connect the service equipment to the power supply
 - C. Conductors used to ground electrical systems
 - D. Conductors that are usually underground

- 5. In what scenario must a motor's full load current be increased by 125% for feeder circuit calculations?**
 - A. When two identical motors are used
 - B. When two different motors are connected
 - C. When connecting the largest motor and another motor
 - D. When one motor exceeds its rated capacity

6. True or False: NEC Section 220.44 allows general-purpose receptacles calculated at 180VA per outlet to be adjusted according to demand factors.
- A. True
 - B. False
 - C. It depends on the receptacle type
 - D. Only for fixed multi-outlet assemblies
7. What does overcurrent protection prevent in electrical systems?
- A. Power surges
 - B. Excessive current flow
 - C. Voltage drops
 - D. Energy wastage
8. What is a feeder panel?
- A. A panel that connects directly to the main power supply
 - B. A distribution panel for branch circuits
 - C. A backup power supply unit
 - D. A panel that reduces load fluctuations
9. What is a critical factor to consider when planning a new electrical service?
- A. Cost of installation
 - B. Evaluating total load
 - C. Type of building materials
 - D. Design aesthetics
10. What must be checked for all feeders?
- A. That they have adequate grounding
 - B. That they are installed within 5 feet of equipment
 - C. That they have adequate overcurrent protection
 - D. That they are made of copper only

Answers

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

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Explanations

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1. What is the load calculated for a laundry circuit?

- A. 1200VA
- B. 1500VA**
- C. 2000VA
- D. 1000VA

The load calculated for a laundry circuit is commonly considered to be 1500VA. This value is based on guidelines provided in the National Electrical Code (NEC) which specifies that for laundry circuits, a minimum demand of 1500VA is generally used for load calculations. This figure is crucial because it ensures that the electrical supply to the laundry area can handle the typical load imposed by washers and dryers, accounting for the safety and efficiency of the circuit. By standardizing this load calculation, it helps in sizing the conductors and protective devices appropriately, ensuring that the circuit operates safely under normal conditions. The choice of 1500VA also aligns with practical expectations regarding the power requirements of typical laundry equipment, which often features motors and heating elements that together require a significant amount of electrical load. Establishing this amount helps to create a balanced and reliable electrical system that minimizes the risk of overloading and potential hazards in the laundry area.

2. What is the primary purpose of conducting load calculations in electrical systems?

- A. To determine the electrical load requirements to ensure safety and efficiency**
- B. To calculate the cost of electricity for a facility
- C. To assess the environmental impact of power generation
- D. To compare different energy suppliers

Conducting load calculations in electrical systems is essential primarily to determine the electrical load requirements, which ensures both safety and efficiency in the system's design and operation. Proper load calculations help electrical engineers and planners identify how much power is needed to adequately supply a facility, taking into account all devices and appliances that will draw current. This ensures that the electrical infrastructure can handle the anticipated loads without overloading circuits, which could lead to electrical failures or safety hazards. Accurate load calculations contribute to the selection of appropriate conductors, circuit breakers, and transformers, ensuring that these components are sufficient for the expected electrical demands. Furthermore, understanding the load helps in designing an efficient system that minimizes energy waste, contributes to effective energy management, and supports compliance with local electrical codes and standards. While other options may touch upon important aspects related to energy consumption and supply, they do not address the fundamental necessity of assessing load requirements. Cost calculations, environmental impacts, and supplier comparisons are secondary considerations that rely on the foundational analysis provided by load calculations. This fundamental principle is vital for the safe and optimal operation of electrical systems in both residential and commercial contexts.

3. What is the primary purpose of a load bank test?

- A. To measure power consumption
- B. To simulate an electrical load**
- C. To assess energy efficiency
- D. To evaluate safety protocols

The primary purpose of a load bank test is to simulate an electrical load. This testing method is essential when evaluating the performance of electrical generators or uninterruptible power supply (UPS) systems. By applying a controlled load, the test checks the functioning of these systems under conditions that mimic real-life usage. Simulating an electrical load allows for assessments of how the generator or UPS handles various load levels, ensuring that it can meet demand when required. This test helps identify any potential issues that may not be observable during routine operation. It also verifies the capacity of the equipment and helps ensure that it operates efficiently, reliably, and safely under load. Other options may seem relevant but do not capture the primary purpose of the load bank test. Measuring power consumption, for instance, is a component of the broader assessment that occurs during such tests but does not define the main goal. Similarly, assessing energy efficiency and evaluating safety protocols may be important considerations in electrical systems, but they are secondary outcomes associated with the insights gained from simulating the electrical load rather than being the primary purpose of the test itself.

4. What is the definition of service-entrance conductors?

- A. Conductors that carry electricity within the building
- B. Conductors that connect the service equipment to the power supply**
- C. Conductors used to ground electrical systems
- D. Conductors that are usually underground

Service-entrance conductors are defined as the conductors that connect the service equipment, which includes the meter and the main disconnect, directly to the power supply from the utility company. This defines their role within the electrical distribution system as they are critical in facilitating the safe and effective delivery of electrical power to a building. These conductors are essential because they oversee the initial connection point for electricity into a building's electrical system. They typically handle high currents from the utility and must be appropriately sized and protected according to electrical codes to ensure safety and efficiency. The other options, while related to electrical systems, do not specifically describe the function of service-entrance conductors. Conductors that carry electricity within the building refer to interior wiring, grounding conductors serve to safely divert excess electricity to the ground, and conductors that are usually underground describe a particular installation method rather than the definition.

5. In what scenario must a motor's full load current be increased by 125% for feeder circuit calculations?

- A. When two identical motors are used
- B. When two different motors are connected
- C. When connecting the largest motor and another motor**
- D. When one motor exceeds its rated capacity

The reason for increasing a motor's full load current by 125% in the context of feeder circuit calculations is based on the requirement to ensure adequate capacity for starting currents and future loads. This adjustment is necessary when connecting the largest motor with any additional motors. The starting current of motors can be significantly higher than their full load current, and by increasing the current rating to 125%, the circuit design can accommodate these inrush currents and ensure that the feeder and service conductors are sized appropriately to handle the total load safely. When the largest motor is connected alongside another motor, this practice helps prevent under-sizing of the conductors, which might lead to overheating or tripping of protective devices during startup conditions. Therefore, it is essential to account for this increased demand in the feeder circuit calculations to maintain system reliability and safety.

6. True or False: NEC Section 220.44 allows general-purpose receptacles calculated at 180VA per outlet to be adjusted according to demand factors.

- A. True**
- B. False
- C. It depends on the receptacle type
- D. Only for fixed multi-outlet assemblies

The assertion is true because NEC Section 220.44 indeed permits the use of demand factors to adjust the load calculated for general-purpose receptacles. When determining the load for these receptacles, a standard calculation of 180 VA per outlet is applied. However, if these receptacles are properly grouped or are part of an overall system equipped with multiple outlets, the demand factors can be utilized to reflect the realistic usage based on demand rather than applying the full 180 VA for every single outlet. This adjustment is beneficial in load calculations as it more accurately represents the anticipated actual current draw on the system, allowing for better sizing of feeders and services. The use of demand factors helps to reduce the overall load calculations, ensuring more efficient electrical design and preventing unnecessary over-sizing of electrical systems.

7. What does overcurrent protection prevent in electrical systems?

- A. Power surges
- B. Excessive current flow**
- C. Voltage drops
- D. Energy wastage

Overcurrent protection is a critical component in electrical systems designed to prevent excessive current flow. When electrical circuits experience current levels that exceed their rated capacity, it can lead to overheating, damage to equipment, or even electrical fires. Overcurrent protection devices, such as fuses and circuit breakers, are used to interrupt the flow of electricity when they detect an overcurrent condition, thereby safeguarding the system and its components. This functionality is essential not only for the longevity of electrical devices but also for the safety of individuals interacting with those systems. By ensuring that the current remains within safe limits, overcurrent protection plays a vital role in maintaining reliable and safe electrical operations. In this context, power surges typically refer to brief spikes in voltage rather than current, voltage drops relate to decreases in electrical pressure that do not necessarily indicate current levels, and energy wastage is a broader concept that does not specifically address the function of current limiting. Therefore, the focus on preventing excessive current flow accurately captures the primary purpose of overcurrent protection.

8. What is a feeder panel?

- A. A panel that connects directly to the main power supply
- B. A distribution panel for branch circuits**
- C. A backup power supply unit
- D. A panel that reduces load fluctuations

A feeder panel is specifically designed to distribute electrical power to branch circuits in a building or facility. It serves as a junction point where the power from the main service panel is directed to various branch circuits that supply power to different loads, such as lighting, receptacles, and equipment. By functioning as a distribution panel for branch circuits, the feeder panel consolidates and organizes the electrical distribution within a particular area or system, ensuring that power is effectively managed and directed to where it is needed. This role is critical for maintaining a reliable and safe electrical system that can accommodate the varied power needs of multiple outlets and devices. Other options do not accurately describe the primary function of a feeder panel. For example, while a panel that connects directly to the main power supply does exist, it typically refers to a main service panel rather than a feeder panel. A backup power supply unit pertains to systems that provide emergency power rather than distributing electrical load. Lastly, the concept of a panel that reduces load fluctuations is not a defined function of a feeder panel; instead, load management typically occurs at various points in a power system but is not the primary purpose of a feeder panel.

9. What is a critical factor to consider when planning a new electrical service?

- A. Cost of installation
- B. Evaluating total load**
- C. Type of building materials
- D. Design aesthetics

When planning a new electrical service, evaluating the total load is a critical factor because it directly influences the design and capacity of the electrical system. Determining the total load involves calculating the amount of electricity that will be required by all the connected devices and systems within the building. This assessment is essential to ensure that the electrical service can handle the demand without overloading, which could lead to outages or safety hazards. Proper load evaluation also assists in selecting the appropriate equipment, such as transformers, service panels, and wiring sizes, that will operate efficiently under expected conditions. Additionally, this helps in compliance with electrical codes and standards, ensuring that the installation is safe and reliable. While factors like installation cost, building materials, and design aesthetics are important to the overall project, they do not impact the fundamental requirement that the electrical service must meet the total anticipated load. If the load is not accurately assessed, any decisions made regarding the other aspects may lead to inadequate service and increased costs in the long run.

10. What must be checked for all feeders?

- A. That they have adequate grounding
- B. That they are installed within 5 feet of equipment
- C. That they have adequate overcurrent protection**
- D. That they are made of copper only

For all feeders, ensuring that they have adequate overcurrent protection is essential. Overcurrent protection is crucial in preventing damage to electrical systems and reducing the risk of fire hazards. It safeguards the conductors and connected equipment by interrupting the flow of electricity when current levels exceed the rated capacity. This helps in avoiding overheating and potential failures. While grounding is important for safety, the primary focus when checking feeders is on the overcurrent protection because this directly prevents excess current from causing damage. Proximity to equipment and material specifications are relevant factors but are less critical than ensuring adequate overcurrent protection, which is a fundamental requirement in electrical design and safety codes.

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://loadcalcfeedersservices.examzify.com>

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

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