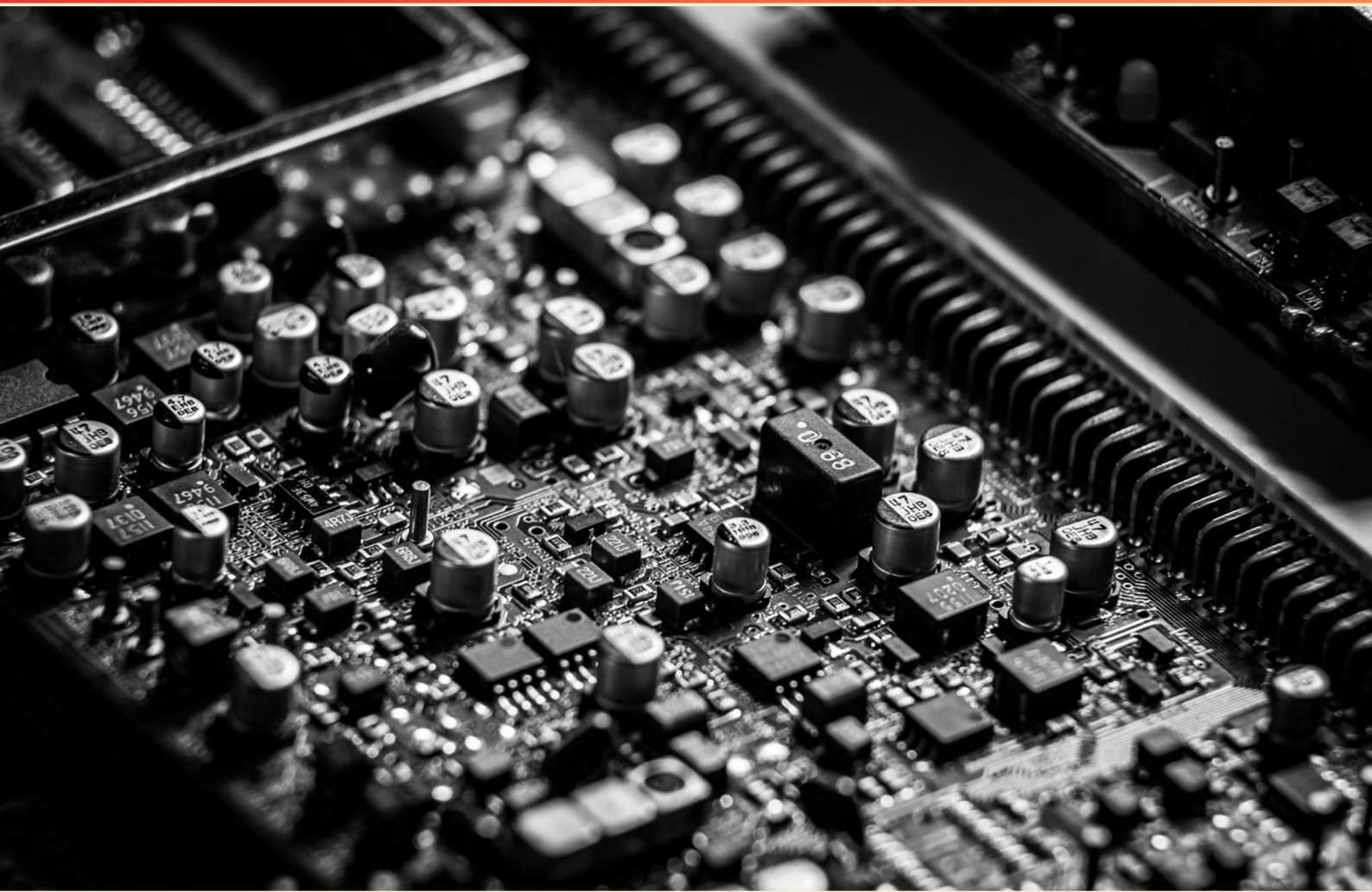


NCCER LOAD CALCULATIONS – FEEDERS AND SERVICES (26401-23) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR
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. Show windows and track lighting are covered in which NEC section?**
 - A. NEC Section 220.46
 - B. NEC Section 230.71(B)
 - C. NEC Article 408
 - D. NEC Article 430
- 2. Where can you find the 25' tap rule?**
 - A. NEC Section 240.21(B)(2)
 - B. NEC Section 240.21(B)(3)
 - C. NEC Section 230.6
 - D. NEC Table 430.250
- 3. General lighting loads for non-dwelling occupancies are detailed in which NEC resource?**
 - A. NEC Section 220.14(A)
 - B. NEC Table 220.42(A)
 - C. NEC Section 430.24
 - D. NEC Section 230.79
- 4. A 30,000 VA load is supplied by a 240V single-phase feeder. What is the current in amps?**
 - A. 125.00 A
 - B. 110.00 A
 - C. 120.00 A
 - D. 130.00 A
- 5. In feeder sizing, which type of load must be increased by 125%?**
 - A. Noncontinuous
 - B. Continuous
 - C. Both
 - D. Neither

- 6. What is the primary purpose of comparing calculated demand to acceptable limits in voltage drop calculations?**
- A. Ensure that voltage drop limits are met.
 - B. Determine conductor material.
 - C. Decide on service disconnect rating.
 - D. Estimate installation cost.
- 7. Which section contains the sizing of single-phase dwelling services and feeders?**
- A. NEC Section 310.12
 - B. NEC Table 430.248
 - C. NEC Section 220.82(C)
 - D. NEC Section 230.23
- 8. Which NEC section deals with service disconnecting means?**
- A. NEC Section 230.71(B)
 - B. NEC Article 430
 - C. NEC Section 600.5(A)
 - D. NEC Article 408
- 9. How do you determine the service size from the calculated load?**
- A. Sum all applicable loads, then select the smallest standard disconnect larger than calculated demand.
 - B. Sum only non-continuous loads and ignore demand factors.
 - C. Sum all applicable loads, apply continuous factors and demand factors, then select the next standard-size service disconnect rating or main breaker that is greater than the calculated demand.
 - D. Choose the service size based solely on transformer kVA rating.
- 10. A No.250 Kcmil THHN copper conductor in 101°F ambient has an ampacity of which value?**
- A. 260 A
 - B. 263.9 A
 - C. 270 A
 - D. 280 A

Answers

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

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Explanations

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1. Show windows and track lighting are covered in which NEC section?

- A. NEC Section 220.46**
- B. NEC Section 230.71(B)
- C. NEC Article 408
- D. NEC Article 430

The main concept is determining how to size the lighting load for a dwelling. NEC 220.46 provides the method for calculating the dwelling unit lighting load, and it includes common fixed lighting installations such as track lighting alongside other lighting fixtures. This is why it's the best fit for showing how windows (as part of general lighting considerations) and track lighting are accounted for in load calculations. The other options cover different topics: 408 deals with panelboards and switches, 430 covers motors and motor circuits, and 230.71(B) relates to service equipment/ disconnecting means rather than how lighting loads are calculated. So, the section that specifically addresses calculating the lighting load for a dwelling unit is NEC 220.46.

2. Where can you find the 25' tap rule?

- A. NEC Section 240.21(B)(2)**
- B. NEC Section 240.21(B)(3)
- C. NEC Section 230.6
- D. NEC Table 430.250

The rule about a 25-foot tap length comes from the taps section of the NEC, specifically the provision that defines the allowable length for a tap conductor from the last overcurrent protective device to the point of utilization. This 25-foot limit is what lets a short, direct connection be treated under tap rules rather than as a full feeder, simplifying sizing and protection as long as other requirements are met. That exact 25-foot tap rule is found in NEC 240.21(B)(2). If the run is longer than 25 feet, different tap conditions apply (covered under other parts of 240.21(B)), not the 25-foot rule. The other options address unrelated topics: 230.6 concerns service disconnect requirements, and Table 430.250 deals with motor overload protection, not the tap-length rule. So the correct place to find the 25-foot tap rule is NEC 240.21(B)(2).

3. General lighting loads for non-dwelling occupancies are detailed in which NEC resource?

- A. NEC Section 220.14(A)
- B. NEC Table 220.42(A)**
- C. NEC Section 430.24
- D. NEC Section 230.79

General lighting loads for non-dwelling occupancies come from NEC Table 220.42(A). This table lists the lighting unit load in VA per square foot for different types of nonresidential occupancies. To size feeders or a service, you multiply the building area by the unit load from the table for the specific occupancy, then apply any applicable demand factors and add to other loads as needed. The other sections referenced in the choices relate to different types of loads or parts of the code (such as motors or other calculations) and do not provide the general lighting unit loads for non-dwelling occupancies.

4. A 30,000 VA load is supplied by a 240V single-phase feeder. What is the current in amps?

- A. 125.00 A
- B. 110.00 A
- C. 120.00 A
- D. 130.00 A

In a single-phase system, apparent power S equals voltage times current: $S = V \times I$. So the current is $I = S / V$. Here, S is 30,000 VA and V is 240 V, so $I = 30,000 / 240 = 125$ A. Verifying: $125 \text{ A} \times 240 \text{ V} = 30,000 \text{ VA}$, which matches the given load. If you were using real power instead of apparent power, you'd divide by the voltage and multiply by the power factor, but with apparent power the division by voltage gives the current directly.

5. In feeder sizing, which type of load must be increased by 125%?

- A. Noncontinuous
- B. Continuous
- C. Both
- D. Neither

The concept tested is how continuous loads are treated when sizing feeders. Continuous loads are defined as those that run for 3 hours or more in a 24-hour period. To prevent overheating and provide adequate margin for long-term operation, the ampacity for continuous loads is increased by 125% when sizing feeders and services. Noncontinuous loads do not get this increase because they aren't sustained long enough to cause the same heating risk. In practice, you size the feeder by adding 1.25 times the continuous-load amperage to the actual amperage of the noncontinuous loads. For example, if there is a continuous load of 40 A and a noncontinuous load of 20 A, the feeder would be sized for $1.25 \times 40 + 20 = 50 + 20 = 70$ A. So the type that must be increased by 125% is the continuous load.

6. What is the primary purpose of comparing calculated demand to acceptable limits in voltage drop calculations?

- A. Ensure that voltage drop limits are met.
- B. Determine conductor material.
- C. Decide on service disconnect rating.
- D. Estimate installation cost.

Voltage drop calculations are a check to ensure the voltage delivered to every point of use remains within the allowed limits under load. By comparing the calculated demand to the acceptable limits, you confirm that the conductor sizes and routing will keep the voltage within the required range for all devices and outlets. If the drop is too high, you would adjust the design—typically by enlarging conductors or shortening runs—to bring the voltage back within limits. This ensures proper equipment operation, reliability, and compliance with applicable guidelines.

7. Which section contains the sizing of single-phase dwelling services and feeders?

- A. NEC Section 310.12**
- B. NEC Table 430.248
- C. NEC Section 220.82(C)
- D. NEC Section 230.23

Sizing the conductors for dwelling services and their feeders is handled by a section that provides the ampacity values to use for dwelling units. This section gives the direct method to determine how large the service and feeder conductors must be, by tying the calculated load (from the dwelling calculation rules) to the appropriate conductor ampacity in the general ampacity tables, while accounting for the insulation temperature rating. In practice, you first determine the dwelling's load, then select a conductor size whose ampacity meets or exceeds that load using the provisions in this section. That makes it the go-to rule for sizing single phase dwelling services and feeders. The other references relate to different aspects: one covers motor circuits and protections, another outlines dwelling-load calculations, and another general service conductor guidance that isn't the specific dwelling-service sizing rule.

8. Which NEC section deals with service disconnecting means?

- A. NEC Section 230.71(B)**
- B. NEC Article 430
- C. NEC Section 600.5(A)
- D. NEC Article 408

Shutoff capability for the building's power is addressed in the part of the NEC that covers service equipment. This section sets up what kinds of service disconnects are allowed, how many may be required, and, crucially, where the disconnecting means must be located and how accessible it must be. That direct focus on the device and its placement for disconnecting the service makes it the correct choice. The other sections pertain to motor circuits, signs, or panelboards—topics that do not specifically address how the service can be quickly and safely disconnected.

9. How do you determine the service size from the calculated load?

- A. Sum all applicable loads, then select the smallest standard disconnect larger than calculated demand.
- B. Sum only non-continuous loads and ignore demand factors.
- C. Sum all applicable loads, apply continuous factors and demand factors, then select the next standard-size service disconnect rating or main breaker that is greater than the calculated demand.**
- D. Choose the service size based solely on transformer kVA rating.

Sizing the service hinges on calculating the maximum demand, not just summing every connected load. You must account for how loads actually operate: continuous loads that run for extended periods and noncontinuous loads that don't run at full strength all the time. Multiply continuous loads by 1.25 to convert them to their maximum demand and apply demand factors to noncontinuous/grouped loads according to NEC tables. After applying these factors, add all the loads to get the calculated demand. The service size is then chosen by selecting the next standard-size service disconnect rating or main breaker that is greater than that calculated demand. This approach ensures the service can handle peak usage with a safe margin. Choosing based only on transformer kVA or ignoring demand factors would misestimate the real load and could lead to an undersized or oversized service.

10. A No.250 Kcmil THHN copper conductor in 101°F ambient has an ampacity of which value?

- A. 260 A
- B. 263.9 A**
- C. 270 A
- D. 280 A

Ampacity is the maximum current a conductor can carry safely, based on the insulation rating and the ambient temperature. For THHN copper, you start with the base ampacity from the 90°C column of NEC Table 310.16. A 250 kcmil copper conductor has a base ampacity of about 270 A at 90°C. Because the conductor is in a 101°F (about 38°C) ambient, you must apply the ambient temperature correction factor for that temperature (from the ambient correction factors table). That correction factor at roughly 38°C is about 0.977, which reduces the base value to $270 \times 0.977 \approx 263.8$ A, rounded to 263.9 A. So the ampacity in 101°F ambient is 263.9 A. If more than one current-carrying conductor were in the same space, additional derating would apply, but for a single conductor in that ambient, this is the controlling value.

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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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