

INDEPENDENT ELECTRICAL CONTRACTORS (IEC) FIRST YEAR PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://iecfirstyear.examzify.com>



Copyright © 2026 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 accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

SAMPLE

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

SAMPLE

1. Which Code reference specifies the type of disconnecting means that can be used on a multiwire branch circuit that feeds devices mounted on the same yoke?
 - A. 210.12(B)(4)
 - B. 300.5
 - C. 240.15(B)(1)
 - D. 110.3(B)
2. What is the THHN temperature rating commonly used for dry locations?
 - A. 60°C
 - B. 90°C (Correct)
 - C. 75°C
 - D. 105°C
3. If there are two laundry branch circuits, each 1,500 VA, the total laundry load is ___ VA.
 - A. 1,500 VA
 - B. 2,000 VA
 - C. 4,000 VA
 - D. 3,000 VA
4. Which of the following best describes safe practices when working on electrical systems on a job site?
 - A. Only use gloves; no need to de-energize.
 - B. Turn off power at the main only during the final inspection.
 - C. Do not wear PPE; proceed quickly to finish.
 - D. Lockout/Tagout procedures; wear PPE; de-energize equipment; verify with testing; barriers and signage.
5. Loads that do not operate at the same time are noncoincident loads. When calculating service load only the ___ of two noncoincident loads needs to be included.
 - A. larger
 - B. smaller
 - C. average
 - D. sum

6. Which NEC annex is used to reference conduit fill calculations when all conductors are the same size?
- A. Annex A
 - B. Annex B
 - C. Annex C
 - D. Annex D
7. Which unit is used to measure energy consumption that is commonly used to calculate electricity costs?
- A. Watts
 - B. Amperes
 - C. Kilowatt-hours
 - D. Volts
8. The minimum size service disconnect for a single-family dwelling with a computed load of kVA is how many amperes?
- A. 60 A
 - B. 70 A
 - C. 100 A
 - D. 125 A
9. How many kilowatts does a 100-amp residential service draw when fully loaded?
- A. 20 kW
 - B. 24 kW
 - C. 28 kW
 - D. 32 kW
10. If the leads of the voltmeter are placed at T3 and T4 the meter will indicate
- A. 0 V
 - B. 120 V
 - C. 240 V
 - D. 12 V

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which Code reference specifies the type of disconnecting means that can be used on a multiwire branch circuit that feeds devices mounted on the same yoke?

- A. 210.12(B)(4)
- B. 300.5
- C. 240.15(B)(1)**
- D. 110.3(B)

The key idea here is that a multiwire branch circuit uses two ungrounded conductors that share a neutral, and if those conductors feed devices on the same yoke, they must be able to be shut off together. The safety concern is that leaving one hot energized while the other is disconnected can still energize parts of the circuit or create shock hazards through the shared neutral or through the devices themselves. To prevent this, the disconnecting means must simultaneously disconnect all ungrounded conductors at the origin. In practice, that means using a common disconnect such as a two pole breaker with a common trip or a pair of breakers with a handle tie, so both hot conductors are opened together. The other options don't address this requirement: they deal with unrelated topics like general listing/installation, wiring spacing, or AFCI protection. So the correct reference is the one that mandates a common, simultaneous disconnection of all ungrounded conductors for a multiwire branch circuit feeding devices on the same yoke.

2. What is the THHN temperature rating commonly used for dry locations?

- A. 60°C
- B. 90°C (Correct)**
- C. 75°C
- D. 105°C

THHN insulation is specified with different temperature ratings depending on where the wire is installed. For dry locations, THHN is rated at 90°C, which is why this rating is used in dry installations. This higher rating lets you apply the 90°C ampacity when calculating conductor size, provided the terminations and devices are also rated for 90°C. In wet locations, THHN is rated 75°C, and 60°C is a lower/older rating not used for THHN in dry locations. The 105°C option isn't a THHN rating. So the commonly used dry-location rating is 90°C.

3. If there are two laundry branch circuits, each 1,500 VA, the total laundry load is ___ VA.

- A. 1,500 VA
- B. 2,000 VA
- C. 4,000 VA
- D. 3,000 VA**

Laundry loads are calculated by adding the VA rating of each laundry branch circuit. Each circuit contributes 1,500 VA, so with two such circuits you add 1,500 + 1,500 to get 3,000 VA. This is why the total laundry load is 3,000 VA. If there were more circuits, you'd keep adding their 1,500 VA values; with one circuit it would be 1,500 VA, with three it would be 4,500 VA, and so on.

4. Which of the following best describes safe practices when working on electrical systems on a job site?

- A. Only use gloves; no need to de-energize.
- B. Turn off power at the main only during the final inspection.
- C. Do not wear PPE; proceed quickly to finish.

D. Lockout/Tagout procedures; wear PPE; de-energize equipment; verify with testing; barriers and signage.

Safe electrical work starts with controlling energy so that a circuit cannot energize unexpectedly and cause shock, burns, or arc flash. The essential method for doing this is lockout/tagout: isolating each energy source, securing the device in the off position (lock), and tagging it to warn others not to re-energize while work is in progress. Wearing appropriate PPE is important, but it does not replace the need to actually de-energize the equipment or to verify that it is safe to work on. After locking out and isolating the equipment, you must verify there is no voltage present with proper testing before touching any conductors or components. Setting up barriers and clear signage helps keep others from energizing the system or entering a hazardous area during the work. The other options fall short because they rely on limited protections or overlook key safety steps: gloves alone don't address all hazards; turning off the main only during the final inspection leaves most of the work energized for too long; and proceeding without PPE ignores personal protection and potential exposure risks.

5. Loads that do not operate at the same time are noncoincident loads. When calculating service load only the ___ of two noncoincident loads needs to be included.

- A. larger**
- B. smaller
- C. average
- D. sum

When two loads don't operate at the same time, you size the service for the higher single demand. That's why you include only the larger of the two noncoincident loads. The system must handle the worst-case single load, not the sum, because both loads won't be drawing current at once. Using the larger value prevents overbuilding the service while still meeting the peak demand that could occur. For example, if one load could draw 20 A and the other 12 A but they never run simultaneously, the service need only be sized for 20 A, not 32 A or an average.

6. Which NEC annex is used to reference conduit fill calculations when all conductors are the same size?

- A. Annex A
- B. Annex B
- C. Annex C**
- D. Annex D

Conduit fill is about how much space inside a raceway the conductors occupy. When every conductor is the same size, there's a simple set of tables that directly tell you how many conductors of that size can fit in each conduit size. Annex C provides this straightforward lookup for identical-size conductors, so you can determine fill quickly without adding up the cross-sectional areas of mixed-sized conductors. If conductors differed in size, you'd use the more general fill calculations or other annex references, which are more involved. In practice, you'd pick the conduit size, use Annex C to read the maximum number of identical conductors allowed, and make sure your total does not exceed that limit.

7. Which unit is used to measure energy consumption that is commonly used to calculate electricity costs?

- A. Watts
- B. Amperes
- C. Kilowatt-hours**
- D. Volts

Energy used over time is what drives electricity costs, so the unit that measures that consumption is kilowatt-hours. Watts, amperes, and volts each describe a different electrical property: watts measure power (the rate of energy use at any moment), amperes measure current, and volts measure electrical potential. Kilowatt-hours combine power with time to quantify total energy used. For example, a 1 kW appliance running for 1 hour uses 1 kWh of energy; a price of, say, \$0.20 per kWh would cost \$0.20 for that hour of use. Since utility bills reflect energy consumed, kilowatt-hours are the unit most commonly used to calculate electricity costs.

8. The minimum size service disconnect for a single-family dwelling with a computed load of kVA is how many amperes?

- A. 60 A**
- B. 70 A
- C. 100 A
- D. 125 A

For a single-family dwelling, there is a fixed minimum size for the service disconnect: it must be at least 60 amperes. When you calculate the service current from the computed load ($I = \text{kVA} \times 1000 \div V$, with V typically 240 V for dwelling services), if that result is less than 60 A, you still install a 60 A disconnect. If it's greater, you size up to the next standard rating that meets or exceeds the calculated current. So, even though the computed load is given in kVA, the minimum you use for the service disconnect is 60 amperes.

9. How many kilowatts does a 100-amp residential service draw when fully loaded?

- A. 20 kW
- B. 24 kW**
- C. 28 kW
- D. 32 kW

The main idea is that the service rating sets the maximum current available at the system voltage. For a typical US residential service, 100 amps at 240 volts means the maximum real power you can draw is $P = V \times I = 240 \text{ V} \times 100 \text{ A} = 24,000 \text{ W}$, i.e., 24 kW. Load can be a mix of 120 V and 240 V, but the total power cannot exceed about 24 kW when the service is fully loaded. The other numbers would require more current than the service provides, so they don't fit.

10. If the leads of the voltmeter are placed at T3 and T4 the meter will indicate

A. 0 V

B. 120 V

C. 240 V

D. 12 V

In a typical 120/240 V service, the transformer secondary is center-tapped, giving two 120 V halves in series with a neutral at the center. The two hot legs are 180 degrees out of phase, so each hot-to-neutral voltage is 120 V, while the voltage between the two hot legs is 240 V. If the voltmeter leads are placed at T3 and T4, you're effectively measuring a hot leg against the neutral point, which yields 120 V. The 240 V only appears when you measure between the two outer hot ends, not hot-to-neutral.

SAMPLE

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://iecfirstyear.examzify.com>

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

SAMPLE