ICC RESIDENTIAL ELECTRICAL INSPECTOR LEVEL 1 (E1) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://iccreselecinspectore1.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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. What is the minimum copper size for a lighting circuit fed by a 15-amp breaker when there are multiple outlets?

A. 12 AWG

B. 14 AWG

C. 16 AWG

D. 10 AWG

2. What is box fill and why is it important for inspections?

A. External dimensions of a box to fit in a wall cavity.

B. The amount of paint in a box used for decorative purpose.

C. The calculation of the required internal volume of a box to safely accommodate conductors, devices, and clamps.

D. The number of outlets allowed per box.

3. When verifying GFCI protection, what should be checked about downstream outlets?

A. That GFCI only protects the outlet it is installed on and no downstream devices.

B. That no outlets beyond GFCI require protection.

C. That the GFCI is installed in the main panel.

D. That downstream outlets are protected as required.

4. A 240 V branch circuit rated at 30 A is used for a cord-and-plug connected appliance and must not exceed 80% of the branch circuit rating. What is the maximum load in VA?

A. 4800 VA

B. 5760 VA

C. 6000 VA

D. 7200 VA

5. In a feeder arrangement, what is the role of the grounded conductor?

A. To carry return current

B. To bond to the grounding electrode

C. To carry fault current to ground

D. To shield the circuit

SAMPLE

6. What size equipment grounding conductor is required for a 70-amp circuit?

A. 6 AWG

B. 4 AWG

C. 8 AWG

D. 10 AWG

7. Which table is used to determine the minimum size copper service conductors for a 200 A service?

A. NEC Table 310.12

B. NEC Table 250.94

C. NEC Table 230.70

D. NEC Table 300.5

8. To supply receptacle outlets in a detached garage, which option lists the minimum number of branch circuits required?

A. Two

B. One

C. Three

D. Four

9. Which protection is required for fixed outdoor electric deicing equipment and snow-melting equipment?

A. Ground fault protection of equipment

B. Arc-fault protection

C. Overcurrent protection for each device

D. No protection required

10. On a 20-amp branch circuit that serves two or more receptacle outlets, which statement is true about receptacle device ratings?

A. 10 A devices are always required

B. 20 A devices are not allowed

C. 25 A devices are preferred

D. 15 A devices are the minimum permitted

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is the minimum copper size for a lighting circuit fed by a 15-amp breaker when there are multiple outlets?

A. 12 AWG

B. 14 AWG

C. 16 AWG

D. 10 AWG

On a 15-amp lighting circuit, the conductor must be able to carry at least 15 A. The smallest copper size that meets that requirement in typical residential wiring is 14 AWG. This size is rated for about 15 A with common insulation used in homes, so it provides the needed capacity without being larger than necessary. A smaller conductor, like 16 AWG, would be undersized for a 15-amp circuit. Larger conductors, such as 12 AWG or 10 AWG, would also work but are not the minimum required. So the minimum copper size is 14 AWG.

2. What is box fill and why is it important for inspections?

A. External dimensions of a box to fit in a wall cavity.

B. The amount of paint in a box used for decorative purpose.

C. The calculation of the required internal volume of a box to safely accommodate conductors, devices, and clamps.

D. The number of outlets allowed per box.

Box fill is the calculation of the internal space a box must have to safely accommodate all conductors, devices, and clamps inside. This matters in inspections because it ensures there's enough room for splices and terminations without overcrowding, which protects insulation, reduces heat buildup, and prevents damage to wires. When performing the fill, each conductor that originates outside and is spliced or terminated inside counts as one unit. All equipment grounding conductors together count as a single unit. Any internal clamps add one unit. The mounting yoke of a device counts as one unit (more if a device spans multiple spaces). The size of the conductors determines how much cubic inches each unit requires, and the total must meet or exceed the box's rated volume. So, the right answer is the calculation of the required internal volume of a box to safely accommodate conductors, devices, and clamps.

3. When verifying GFCI protection, what should be checked about downstream outlets?

A. That GFCI only protects the outlet it is installed on and no downstream devices.

B. That no outlets beyond GFCI require protection.

C. That the GFCI is installed in the main panel.

D. That downstream outlets are protected as required.

When verifying GFCI protection, the key is to ensure that any outlets fed from the GFCI are protected as required. A GFCI protects all receptacles connected to its load terminals, so you must confirm those downstream outlets are wired to the load side and will trip if a ground fault occurs. Test by using the GFCI's own test button and verify that downstream outlets lose power, then reset to restore. This confirms ongoing protection for all outlets that are intended to be protected. If outlets beyond the GFCI aren't protected when they should be, wiring them to the load side or correcting the installation is needed.

SAMPLE

4. A 240 V branch circuit rated at 30 A is used for a cord-and-plug connected appliance and must not exceed 80% of the branch circuit rating. What is the maximum load in VA?

A. 4800 VA

B. 5760 VA

C. 6000 VA

D. 7200 VA

The main idea is that for a cord-and-plug connected appliance on a branch circuit, you limit the continuous load to 80% of the circuit rating to prevent overheating. So the allowable current is 0.8 × 30 A = 24 A. The maximum load in volt-amperes is 240 V × 24 A = 5760 VA. This matches the given answer. The other options would come from using full rating (7200 VA) or miscalculations like 240 V × 20 A (4800 VA) or 240 V × 25 A (6000 VA), which ignore the 80% limit.

5. In a feeder arrangement, what is the role of the grounded conductor?

A. To carry return current

B. To bond to the grounding electrode

C. To carry fault current to ground

D. To shield the circuit

The grounded conductor provides the return path for current in normal operation, completing the circuit. Current leaves the source on the hot conductors and returns on the neutral, so the neutral carries the load current back to the source. It isn't meant to carry fault current to ground (that's the function of the equipment grounding conductor and the grounding system), nor is it used to shield the circuit. Bonding to the grounding electrode happens at the service equipment, while the neutral is typically kept separate from the grounding path in a feeder. So carrying return current is the best fit for its role.

6. What size equipment grounding conductor is required for a 70-amp circuit?

A. 6 AWG

B. 4 AWG

C. 8 AWG

D. 10 AWG

The size of the equipment grounding conductor is determined by the overcurrent device protecting the circuit, using NEC Table 250.122. Its purpose is to provide a low-impedance path for fault current so the protective device can trip. For a circuit protected at 70 amperes, the minimum copper EGC size required is 8 AWG. So 8 AWG copper satisfies the requirement; using a larger size (like 6 or 4 AWG) is allowed but not necessary, while a smaller size (like 10 AWG) would not meet code. If aluminum is used, the required size would be different and larger according to the table.

SAMPLE

7. Which table is used to determine the minimum size copper service conductors for a 200 A service?

A. NEC Table 310.12

B. NEC Table 250.94

C. NEC Table 230.70

D. NEC Table 300.5

Sizing copper service conductors hinges on matching the conductor's ampacity to the service rating using the appropriate ampacity table. For a 200 A service, you look up copper conductor ampacities in NEC Table 310.12, which lists conductor sizes and their allowable current-carrying capacities based on insulation temperature ratings (60°C/75°C/90°C). By selecting the insulation rating that applies to the conductors and terminations, you identify the smallest conductor size whose ampacity meets or exceeds 200 A. The other tables referenced in the choices pertain to different topics (such as grounding electrode conductors, service equipment requirements, or raceway fill) and aren't used to determine the minimum size of service conductors.

8. To supply receptacle outlets in a detached garage, which option lists the minimum number of branch circuits required?

A. Two

B. One

C. Three

D. Four

One is the minimum. A detached garage can be supplied for its receptacle outlets by a single 20-amp branch circuit, with the outlets protected by GFCI. You'd add more circuits only if you anticipate substantial loads or want dedicated feeds for specific tools, but the minimum required to meet the receptacle requirement is one circuit.

9. Which protection is required for fixed outdoor electric deicing equipment and snow-melting equipment?

A. Ground fault protection of equipment

B. Arc-fault protection

C. Overcurrent protection for each device

D. No protection required

Fixed outdoor deicing and snow-melting equipment sit in wet, exposed environments and can energize metal parts if insulation fails. Ground-fault protection of equipment is the protection required because it detects any leakage current from the equipment and immediately interrupts power, reducing the risk of electric shock to anyone who might touch a faulted surface. This protection is specifically mandated for these outdoor devices, reflecting the higher shock hazard in moist outdoor conditions. Arc-fault protection helps prevent fires from arcing but doesn't reliably protect against ground faults, and overcurrent protection for each device is important but does not substitute the dedicated shock protection provided by GFPE. No protection is incorrect due to the clear shock risk in this application.

SAMPLE

10. On a 20-amp branch circuit that serves two or more receptacle outlets, which statement is true about receptacle device ratings?

A. 10 A devices are always required

B. 20 A devices are not allowed

C. 25 A devices are preferred

D. 15 A devices are the minimum permitted

On a 20-amp branch circuit that serves two or more receptacles, the outlets must be rated to handle at least 15 amps. You can use 15-amp or 20-amp receptacles, but you cannot use undersized 10-amp devices or nonstandard 25-amp devices. Therefore, 15-amp receptacles are the minimum permitted, which is why that statement is correct.

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://iccreselecinspectore1.examzify.com

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

SAMPLE