Electrical Safety Level 2 Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

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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

1. **Who shall use test equipment to test circuit elements and verify deenergization?**
   - A. Maintenance technician
   - B. Qualified
   - C. Trainee
   - D. Supervisor

2. **Dropping a tool on energized parts and not making a solid connection causing current to flow outside of the path is an example of which type of fault current?**
   - A. Ground fault current
   - B. Short-circuit current
   - C. Arcing fault current
   - D. Impedance fault current

3. **If regular maintenance is not performed, incident energy in electrical systems is likely to:**
   - A. Decrease
   - B. Stay the same
   - C. Become unpredictable
   - D. Increase

4. **The fault current study is the beginning point for which analyses?**
   - A. Arc flash only
   - B. Grounding analysis
   - C. Maintenance planning
   - D. Arc flash and equipment evaluations

5. **Under lockout/tagout program requirements, the employer shall be responsible for which of the following?**
   - A. Auditing the execution of lockout/tagout procedures
   - B. Providing the equipment necessary to perform lockout/tagout procedures
   - C. Providing lockout/tagout training to workers
   - D. All of the above

6. A circuit breaker that is equipped with an energy reduction maintenance switch can impact which component of risk?

- **A. Likelihood**
- **B. Time to reenergize**
- **C. Severity**
- **D. Both**

7. What information is typically required to perform a detailed calculation of the 3-phase available fault current?

- **A. The impedance values of various components in the electrical system**
- **B. The color coding of wires**
- **C. The date of installation**
- **D. The manufacturer's warranty**

8. Replacing a transformer with the same kVA and voltage ratings but a lower %Z has which impact on available fault current downstream?

- **A. Fault currents are decreased**
- **B. No change**
- **C. Fault currents are increased**
- **D. It depends**

9. Which of the following is not considered the protecting overcurrent protective device for a panelboard directly fed from the secondary conductors of a transformer?

- **A. The secondary OCPD on the transformer**
- **B. The main OCPD inside the panelboard**
- **C. The primary OCPD on the feeder supplying the transformer**
- **D. The branch-circuit OPD protecting a downstream load**

10. Which scenario would likely result in a higher available fault current?

- **A. An electrical system connected to a utility grid through a 50 kVA transformer**
- **B. An electrical system connected to a utility secondary network**
- **C. An electrical system operating at low ambient temperatures**
- **D. An electrical system supplied by a local generator**

Answers

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

Explanations

1. Who shall use test equipment to test circuit elements and verify deenergization?

A. Maintenance technician

B. Qualified

C. Trainee

D. Supervisor

The key rule is that testing equipment to verify deenergization must be used by a qualified person. This means someone who has demonstrated the necessary training and knowledge to recognize electrical hazards, select and apply the correct test instruments, and interpret the readings safely. Verifying that a circuit is deenergized is not just about turning a knob; it requires understanding which points to test, how to test for voltage with the right tool, and what steps to take if voltage is present. A qualified person has that level of capability, ensuring work can proceed without exposing themselves or others to shock or arc flash. A trainee lacks the required training, and a supervisor, while able to oversee, is not guaranteed to perform the testing unless they themselves are qualified.

2. Dropping a tool on energized parts and not making a solid connection causing current to flow outside of the path is an example of which type of fault current?

A. Ground fault current

B. Short-circuit current

C. Arcing fault current

D. Impedance fault current

Arcing fault current is tested here. When a tool is dropped onto energized parts but doesn't form a clean, solid connection, an air gap can exist between the tool and the live surface. The high voltage across that gap can ionize the air, creating an arc. That arc becomes a conductive path that isn't the intended circuit path, so current flows through the arc to a location outside the normal conductor route. This is different from a direct short between conductors (which is a solid low-impedance path) or a fault to ground (where current returns through the earth), and it's different from an impedance fault (where insulation partially conducts due to leakage). Arcing faults are common in scenarios with damaged insulation or loose contacts and are a major fire and shock hazard, which is why breakers and arc-fault protection are important.

3. If regular maintenance is not performed, incident energy in electrical systems is likely to:

A. Decrease

B. Stay the same

C. Become unpredictable

D. Increase

Regular maintenance keeps equipment in good condition, preserving insulation, clean and tight connections, and functioning safety devices. When maintenance is skipped, insulation can degrade, connections loosen, and moisture or contaminants can accumulate. Protective devices may also wear and not operate as intended. All of these issues can lead to a fault arc that carries more current and lasts longer before it's interrupted. Since incident energy depends on how much current the arc delivers and how long it lasts, neglecting maintenance tends to raise the energy released during an arc. So incident energy is likely to increase.

4. The fault current study is the beginning point for which analyses?

A. Arc flash only

B. Grounding analysis

C. Maintenance planning

D. Arc flash and equipment evaluations

A fault current study identifies the maximum currents that could flow during a short circuit at various points in the system. This information is the starting point for determining arc flash hazards because the potential energy of an arc depends on the available fault current, system voltage, and clearing times. With these fault current values, engineers can calculate incident energy at different work locations, establish appropriate arc flash boundaries, and specify the proper PPE and safe-work practices. At the same time, the study supports equipment evaluations by verifying that components such as breakers, fuses, conductors, and insulation are rated to withstand the prospective fault currents and by helping to check protection-coordination schemes. Knowing the fault currents ensures equipment can interrupt faults safely and that ratings and clearances are adequate. Grounding analysis and maintenance planning are important topics in their own right, but the fault current study specifically provides the data needed to perform arc flash analyses and to conduct thorough equipment evaluations.

5. Under lockout/tagout program requirements, the employer shall be responsible for which of the following?

A. Auditing the execution of lockout/tagout procedures

B. Providing the equipment necessary to perform lockout/tagout procedures

C. Providing lockout/tagout training to workers

D. All of the above

The main concept is that the employer must establish and maintain a complete lockout/tagout program, covering how procedures are carried out, the equipment used to isolate energy, and the training workers receive. Auditing the execution of lockout/tagout procedures ensures the program is being followed and helps identify gaps or deviations so improvements can be made. Providing the equipment necessary to perform lockout/tagout procedures means supplying the energy isolation devices, padlocks, hasps, tags, and any other tools needed to safely isolate and control energy sources. Providing lockout/tagout training to workers includes initial instruction on the program, ongoing retraining when procedures change or tasks vary, and training for new employees or supervisors who oversee or perform lockout/tagout. Because all of these elements are essential to a safe and effective program, the best answer is that all of these responsibilities fall on the employer. Relying on only one aspect would leave gaps in safety and compliance. OSHA standards require these combined duties to protect workers.

6. A circuit breaker that is equipped with an energy reduction maintenance switch can impact which component of risk?

A. Likelihood

B. Time to reenergize

C. Severity

D. Both

In arc-flash risk, the overall danger is driven by how likely a fault is and how severe the outcome would be if it occurs. An energy reduction maintenance switch on a circuit breaker lowers the energy that can be released during a fault. By reducing the incident energy, it directly lowers the potential burn injuries workers could suffer, which is the severity portion of the risk. It doesn't change how likely a fault is to happen—the switch doesn't prevent faults; it only limits the energy released if one occurs. It also isn't primarily about how fast the system can be reenergized after maintenance. So the improvement is in reducing the severity, not the likelihood or the reenergization time.

7. **What information is typically required to perform a detailed calculation of the 3-phase available fault current?**

   A. **The impedance values of various components in the electrical system**

   B. **The color coding of wires**

   C. **The date of installation**

   D. **The manufacturer's warranty**

Understanding available fault current in a three-phase system relies on the impedances along the fault path. The amount of current that can flow when a short occurs is determined by the total impedance seen by the fault, which includes the source impedance, transformer impedance, feeders, cables, and any other circuit elements in series with the fault. Since the fault current is governed by the circuit's impedance (and the system voltage), you must know the impedance values of all components to compute it accurately. Other information, like wire color coding, installation date, or manufacturer warranty, does not affect the electrical impedance or how the fault current flows, so it doesn't enter into the calculation.

8. **Replacing a transformer with the same kVA and voltage ratings but a lower %Z has which impact on available fault current downstream?**

   A. **Fault currents are decreased**

   B. **No change**

   C. **Fault currents are increased**

   D. **It depends**

The amount of fault current flowing downstream is set by the impedance in the fault path. Replacing the transformer with the same kVA and voltage but a lower percent impedance means the transformer presents a smaller impedance to a fault. Since fault current is roughly the system voltage divided by the impedance in the fault loop, lowering that impedance causes the available fault current to rise. So, the downstream fault currents increase. The other possibilities don't fit because increasing impedance would reduce fault current, unchanged impedance would keep it the same, and "depends" isn't accurate here since the change is directly determined by the percent impedance.

9. Which of the following is not considered the protecting overcurrent protective device for a panelboard directly fed from the secondary conductors of a transformer?

A. The secondary OCPD on the transformer

B. The main OCPD inside the panelboard

C. The primary OCPD on the feeder supplying the transformer

D. The branch-circuit OPD protecting a downstream load

When a panelboard is fed from the secondary of a transformer, the protection for the panelboard comes from devices on the transformer's secondary side and from the panelboard itself. The protecting device on the transformer's secondary side trips to guard against overloads on that side, and the main disconnect inside the panelboard protects the panelboard and its downstream circuits. A branch-circuit OCPD protects a downstream load, not the panelboard itself, though it is part of the panelboard's protection scheme. The device on the feeder that supplies the transformer—the primary OCPD on that feeder—lies on the transformer's primary side and protects the transformer's supply circuit, not the panelboard's secondary side. Therefore, that primary OCPD is not considered a protecting device for the panelboard fed from the transformer's secondary.

10. Which scenario would likely result in a higher available fault current?

A. An electrical system connected to a utility grid through a 50 kVA transformer

B. An electrical system connected to a utility secondary network

C. An electrical system operating at low ambient temperatures

D. An electrical system supplied by a local generator

Available fault current rises when the source impedance is lower. A utility secondary network provides a very low-impedance, strong source because it's fed from the utility grid with multiple parallel paths and substations, so it can deliver a large short-circuit current at a fault point. A single 50 kVA transformer introduces its own impedance (usually a few percent), which limits how much current can flow when a fault occurs downstream. A local generator's fault current depends on its design and size and is typically less than what a utility network can supply. Temperature effects mainly change conductor resistance and have only a small impact compared with the source's impedance. Therefore, the scenario connected to a utility secondary network would produce the highest available fault current.

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://electricalsafetylevel2.examzify.com

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