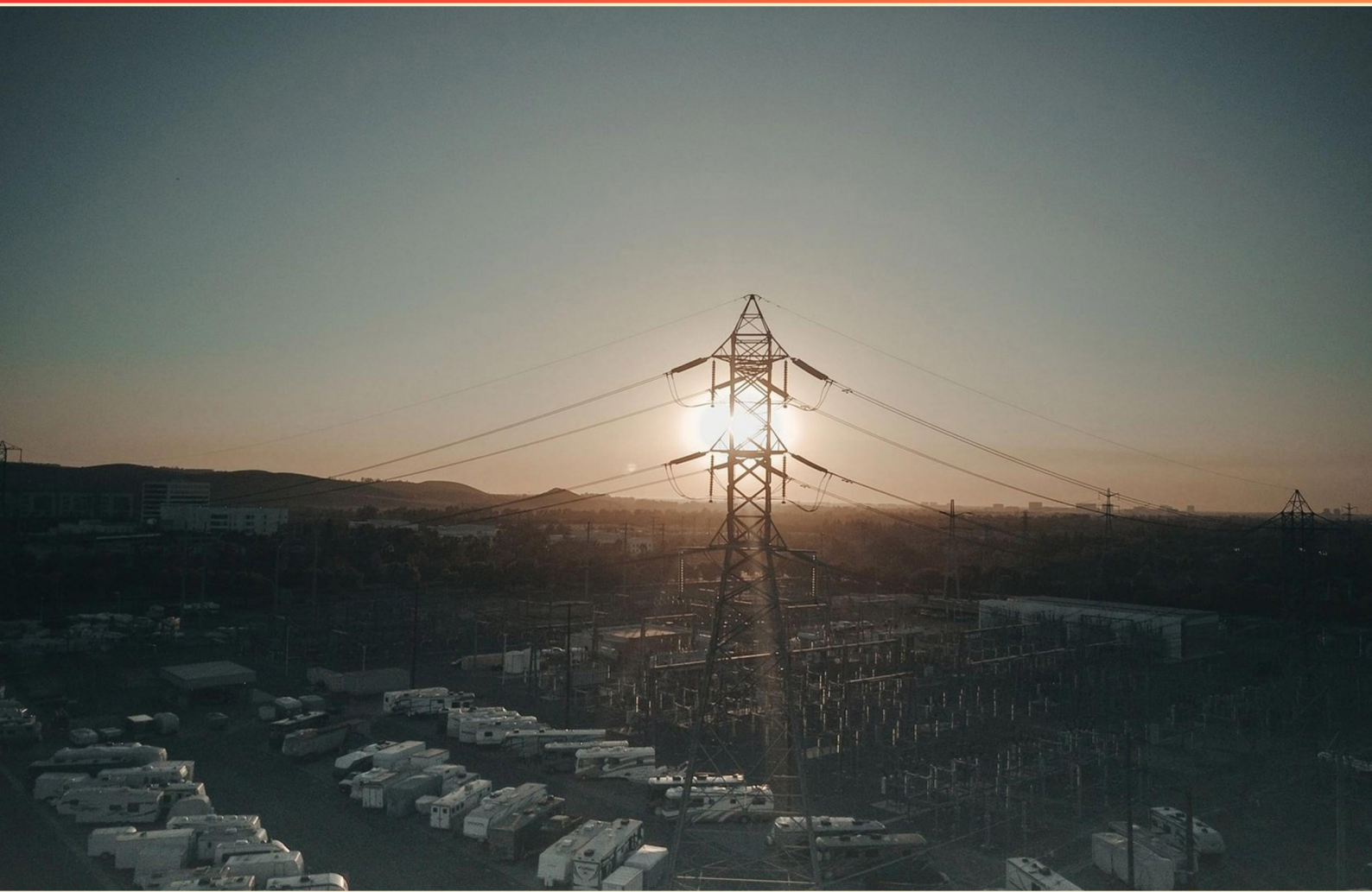


AVO SUBSTATION MAINTENANCE II PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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

<https://avosubstationmaint2.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	16

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. Insulation resistance measurements should be taken from winding to winding and winding to ground for the duration of at least _____.
 - A. 5 min
 - B. 10 min
 - C. 15 min
 - D. 20 min
2. Surge arresters in substations are primarily used for what purpose?
 - A. To boost power efficiency
 - B. To reduce noise levels
 - C. To protect equipment from voltage spikes due to lightning or switching surges
 - D. To increase the lifespan of batteries
3. How does routine maintenance impact energy efficiency?
 - A. It often increases demand and usage
 - B. It lowers energy costs for consumers
 - C. It ensures equipment runs at optimal conditions
 - D. It has no significant effect on energy efficiency
4. Which gas is usually absent when certain faults occur in cellulosic insulation?
 - A. Methane
 - B. Acetylene
 - C. Carbon Dioxide
 - D. Oxygen
5. The tap changer voltage charts provide the voltage _____ for the different tap positions.
 - A. Levels
 - B. Settings
 - C. Values
 - D. Ranges

- 6. In a Dyn1 transformer, what is the nature of the low side winding connection?**
- A. Delta
 - B. WYE
 - C. Open-ended
 - D. Inverse
- 7. What does remote monitoring involve in substations?**
- A. Using technology to monitor substation operations from a distance
 - B. Physical presence of technicians in the substation
 - C. Manual inspection of equipment on-site
 - D. Automating all functions without human oversight
- 8. How frequently should inspection of protective relays be conducted?**
- A. Every month
 - B. Once every year or as recommended by the manufacturer
 - C. Once every five years
 - D. Every two years
- 9. The primary risk of not short-circuiting a current transformer secondary is the development of what?**
- A. Excessive temperature
 - B. Low voltage
 - C. Dangerous high voltages
 - D. High capacitance
- 10. Most manufacturers report winding resistance measurements with the windings connected in which configuration?**
- A. Parallel
 - B. Series
 - C. Bridge
 - D. Delta

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Insulation resistance measurements should be taken from winding to winding and winding to ground for the duration of at least _____.

- A. 5 min
- B. 10 min**
- C. 15 min
- D. 20 min

Insulation resistance measurements are crucial for assessing the integrity of electrical insulation within equipment like transformers and generators. Taking these measurements involves applying a test voltage and waiting for the insulation resistance value to stabilize. The recommended duration for these tests is at least 10 minutes. This duration is important because it allows enough time for moisture or other contaminants in the insulation material to dissipate and for the readings to stabilize, reflecting a more accurate condition of the insulation. Shorter test durations might not provide reliable or consistent results, as they could reflect transient conditions rather than the true insulation status. By conducting the insulation resistance test for 10 minutes, technicians can ensure that they obtain a reading that genuinely indicates the insulation's performance and condition, which is essential for identifying potential failures that could lead to equipment damage or operational issues. Therefore, the correct answer reflects the industry standard for the duration of insulation resistance measurements.

2. Surge arresters in substations are primarily used for what purpose?

- A. To boost power efficiency
- B. To reduce noise levels
- C. To protect equipment from voltage spikes due to lightning or switching surges**
- D. To increase the lifespan of batteries

Surge arresters are essential devices in substations primarily designed to protect electrical equipment from damage caused by voltage spikes. These spikes can be a result of phenomena such as lightning strikes or switching surges, which can introduce transient voltages far exceeding the normal operating conditions. By providing a safe path for these excessive voltages, surge arresters effectively prevent the likelihood of catastrophic failures in transformers, circuit breakers, and other critical components within the substation. This protection is crucial for maintaining the reliability and stability of the electrical supply, as it helps ensure that equipment can continue to function properly without the risk of sudden breakdowns or outages due to external electrical disturbances. The functionality of surge arresters makes them indispensable in safeguarding infrastructure and continuing safe operations within substations.

3. How does routine maintenance impact energy efficiency?

- A. It often increases demand and usage
- B. It lowers energy costs for consumers
- C. It ensures equipment runs at optimal conditions**
- D. It has no significant effect on energy efficiency

Routine maintenance has a profound impact on energy efficiency primarily because it ensures that equipment operates under optimal conditions. When equipment such as transformers, circuit breakers, and other components of a substation are well-maintained, they can function effectively and reliably. This includes having properly lubricated moving parts, clean components, and calibrated sensors, all of which lead to reduced friction, lower electrical resistance, and minimal wear and tear. When equipment runs efficiently, it consumes less energy to provide the same output, thereby enhancing the overall energy efficiency of the system. Poorly maintained equipment can lead to energy losses due to overheating, increased resistance, and malfunctioning parts, which can not only drive up energy consumption but also lead to higher operational costs. Thus, regular maintenance is crucial in preserving the performance and integrity of electrical systems, significantly contributing to energy efficiency.

4. Which gas is usually absent when certain faults occur in cellulosic insulation?

- A. Methane
- B. Acetylene**
- C. Carbon Dioxide
- D. Oxygen

When certain faults occur in cellulosic insulation, acetylene is usually absent. This is primarily due to the type of decomposition that occurs in the insulation material when it is subjected to extreme conditions such as overheating or electrical arcing. Cellulosic insulation is an organic material derived from plant fibers, and when it undergoes thermal decomposition, it generates various gases as byproducts. Acetylene is a hydrocarbon gas that typically forms during the incomplete combustion of organic materials at high temperatures. However, in the specific context of cellulosic insulation faults, the decomposition process may not favor the formation of acetylene, leading to its absence. On the other hand, gases such as methane, carbon dioxide, and oxygen can be produced during the degradation of cellulosic materials. Methane can form during anaerobic processes, while carbon dioxide is a common byproduct of complete combustion. Oxygen, although consumed in reactions, might still be present in varying quantities pre- and post-fault conditions. Thus, the presence of acetylene is markedly low or non-existent when specific faults in cellulosic insulation occur, making it the correct answer in this context.

5. The tap changer voltage charts provide the voltage _____ for the different tap positions.

- A. Levels
- B. Settings
- C. Values
- D. Ranges

The correct response is that the tap changer voltage charts provide the voltage levels for the different tap positions. This terminology is relevant because "voltage levels" accurately reflects the specific voltages that can be obtained at each tap setting on the transformer. Tap changers are utilized to adjust the transformer's output voltage to maintain system stability and ensure that voltage remains within prescribed limits. Understanding the context of tap changing mechanisms is crucial; they essentially allow for fine-tuning of voltage output based on varying load conditions. The charts serve as a guide to the operator, indicating the precise level of voltage that corresponds to each tap position, which is essential for proper system operation and maintenance. The other terms, while related, do not capture the concept as succinctly. "Settings," for instance, may imply a more generic configuration than the specific voltage outputs that "levels" designates. Similarly, "values" could encompass a broader range of information, while "ranges" lacks the precision of indicating exact voltage outputs tied to each tap position. Therefore, "levels" is the term that best encapsulates the information represented in tap changer voltage charts.

6. In a Dyn1 transformer, what is the nature of the low side winding connection?

- A. Delta
- B. WYE
- C. Open-ended
- D. Inverse

In a Dyn1 transformer, the low side winding is connected in a WYE (or star) configuration. This configuration is significant because it provides a neutral point that can be used for grounding purposes, allowing for stable phase voltages and improved system performance. The WYE connection also supports the transformation of line voltage to phase voltage, ensuring that the system's phase currents are balanced. Furthermore, having one winding in WYE allows for easier compatibility with various types of loads and enhances the transformer's capability to handle unbalanced loads or fault conditions. In contrast, other configurations, such as delta or open-ended, do not provide the same advantages in terms of grounding and neutral availability, which are critical for operational safety and reliability in electrical systems.

7. What does remote monitoring involve in substations?

A. Using technology to monitor substation operations from a distance

B. Physical presence of technicians in the substation

C. Manual inspection of equipment on-site

D. Automating all functions without human oversight

Remote monitoring in substations involves using technology to oversee substation operations without the need for staff to be physically present on-site. This approach is increasingly important in modern electrical grid management as it enhances efficiency and safety. With remote monitoring, data can be gathered from equipment in real-time, allowing for quick identification of issues, analysis of performance metrics, and even control of various system functions from a distance. This capability is crucial for ensuring that substations operate optimally and that any potential problems are addressed swiftly to maintain the reliability of power systems. The technology used can include sensors, communication devices, and software for data visualization and analysis, facilitating proactive maintenance and timely responses to abnormal conditions. In contrast to other options, physical presence of technicians (which involves travel and on-site work), manual inspections (which can be time-consuming and dependent on human resources), and automating all functions without human oversight (which may overlook the benefit of human judgment in certain situations) do not capture the effective and strategic advantage that remote monitoring provides.

8. How frequently should inspection of protective relays be conducted?

A. Every month

B. Once every year or as recommended by the manufacturer

C. Once every five years

D. Every two years

The recommended frequency for inspecting protective relays is typically once every year or as dictated by the manufacturer's specifications. This regular inspection is essential because protective relays play a crucial role in the reliability and safety of electrical systems. They detect faults and initiate protective measures such as tripping circuit breakers, thus preventing potential damage or hazards. Annual inspections allow maintenance personnel to assess the functionality of the relays, check for calibration drift, and ensure that any firmware or software updates are applied as necessary. Manufacturers often provide guidelines based on their designs, recommending inspection intervals that maximize performance and minimize the risk of relay failure. While more frequent inspections can provide added reassurance, they may not be practical or necessary for all systems. Conversely, extending the inspection interval beyond manufacturer recommendations can lead to undetected issues that might compromise system safety and reliability. Therefore, adhering to yearly inspections aligns with best practices in maintenance for ensuring the integrity of protective relays in substations.

9. The primary risk of not short-circuiting a current transformer secondary is the development of what?

- A. Excessive temperature
- B. Low voltage
- C. Dangerous high voltages**
- D. High capacitance

The primary risk of not short-circuiting a current transformer secondary is the development of dangerous high voltages. Current transformers are designed to operate with their secondary short-circuited; this allows them to provide a low voltage proportional to the primary current. When the secondary is open-circuited while current is flowing through the primary winding, the current transformer continues to induce a voltage in the secondary circuit. Since there is no place for the induced current to go, this can lead to extremely high voltages that may exceed the insulation rating of the transformer, posing safety hazards. This high voltage condition can result in electrical arcing, equipment damage, and significant safety risks for personnel working around the equipment. Maintaining the integrity of the current transformer through proper short-circuiting of the secondary is essential to prevent these dangerous high voltages from occurring, ensuring both equipment longevity and safety in the substation environment.

10. Most manufacturers report winding resistance measurements with the windings connected in which configuration?

- A. Parallel
- B. Series**
- C. Bridge
- D. Delta

Manufacturers typically report winding resistance measurements with the windings connected in a series configuration. In this arrangement, the resistances of the individual winding coils are additive, allowing for a comprehensive measurement of the total resistance encountered by the current flowing through the windings. This method ensures that the winding resistance reflects the entirety of the winding structure and the connection intact, which is vital for assessing the performance and condition of the equipment. Measuring in series also facilitates a more accurate understanding of how the windings will interact under operational conditions, as it simulates the actual power supply scenario where the windings are in a series path. This is essential for diagnosing issues such as poor connections or winding faults, contributing to optimized performance and safety in the operation of electrical equipment.

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://avosubstationmaint2.examzify.com>

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

SAMPLE