NETA ETT CERTIFIED ASSISTANT LEVEL 3 CERTIFICATION PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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

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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.

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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!

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Questions

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1. **In accordance with NETA-ATS, what should be investigated if shield continuity test results exceed ____ per 1000 feet of cable?**

   A. 5 ohms

   B. 10 ohms

   C. 15 ohms

   D. 20 ohms

2. **How often must NFPA 70E lockout/tagout training be updated?**

   A. Annually

   B. Every 2 years

   C. Every 3 years

   D. Every 5 years

3. **For a coil with a resistance of 15 ohms, what is the formula used to calculate the time constant?**

   A. TC = R/L

   B. TC = L/R

   C. TC = R*L

   D. TC = L + R

4. **Zigzag transformers consist of two windings that are how many degrees out of phase?**

   A. 90 degrees

   B. 120 degrees

   C. 180 degrees

   D. 270 degrees

5. **In the context of electric circuits, inductance and resistance together determine what key characteristic of current flow?**

   A. Voltage

   B. Frequency

   C. Time to reach maximum current

   D. Phase angle

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6. What is the primary advantage of using a series-connected line reactor?

A. Lower cost

B. Increased voltage level

C. Reduction of harmonics

D. Circuit protection

7. In a general industrial application, what kind of reading is acceptable for a new grounding system?

A. 1 ohm

B. 3 ohms

C. 5 ohms

D. 10 ohms

8. When converting the vector (-5.0, -7.0) into magnitude/angle form, what is the magnitude?

A. 7.2

B. 8.6

C. 9.5

D. 10.0

9. In modern EHV circuit breakers, what is the approximate operating time from the receipt of a trip signal to final contact separation?

A. 0.01 seconds

B. 0.03 seconds

C. 0.05 seconds

D. 0.1 seconds

10. When does resonance in electrical systems occur?

A. When transformers are overloaded

B. When harmonic currents interact with system impedance

C. When high voltage is applied

D. When capacitors are installed

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Answers

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

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Explanations

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1. In accordance with NETA-ATS, what should be investigated if shield continuity test results exceed ____ per 1000 feet of cable?

A. 5 ohms

B. 10 ohms

C. 15 ohms

D. 20 ohms

For the question regarding shield continuity test results in accordance with NETA-ATS, the key threshold that triggers further investigation is 10 ohms per 1000 feet of cable. This indicates a level of resistance that could potentially compromise the effectiveness of the shield in safeguarding against electromagnetic interference and ensuring signal integrity in the cable. Keeping the shield within acceptable resistance levels is critical for maintaining the performance and safety of the electrical system. A result exceeding 10 ohms suggests that the shielding is not providing adequate grounding or protection, which could lead to increased susceptibility to noise or disturbances in the signal carried by the cable. Understanding the specifications provided in standards like NETA-ATS is essential for ensuring compliance and preventing issues that arise from poor shield performance. In this context, the selection of 10 ohms emphasizes the importance of maintaining a low-resistance connection in shielded cables to maximize functionality and safety in electrical installations.

2. How often must NFPA 70E lockout/tagout training be updated?

A. Annually

B. Every 2 years

C. Every 3 years

D. Every 5 years

NFPA 70E, which pertains to electrical safety in the workplace, stipulates that employees exposed to electrical hazards must receive lockout/tagout training to ensure their safety during maintenance and repair operations. The standard emphasizes the importance of keeping this training current, reflecting any changes in processes, equipment, or regulations. The guidance provided indicates that training should be updated every three years. This timeframe allows for a balance between ensuring that employees remain informed about current safety practices and the possibility of changes within the workplace that may necessitate a refresh of their knowledge and skills. Regular updates also reinforce the critical nature of safety in environments where electrical hazards are present. Having training updated every three years is a proactive approach that fosters a culture of safety and compliance, ensuring that workers possess the latest information and procedures to protect themselves effectively when working with or near electrical systems.

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3. For a coil with a resistance of 15 ohms, what is the formula used to calculate the time constant?

A. TC = R/L

B. TC = L/R

C. TC = R*L

D. TC = L + R

The time constant for a coil, which is a key concept in understanding the behavior of inductive circuits, is calculated using the formula TC = L/R. In this context, the time constant (TC) represents the time it takes for the current to reach approximately 63.2% of its maximum value after a voltage is applied, or to decay to about 36.8% after the voltage is removed. Here, L denotes the inductance of the coil (measured in henries), and R represents the resistance (measured in ohms). This relationship demonstrates that the time constant is directly proportional to the inductance and inversely proportional to the resistance. A higher inductance means that it takes longer for the current to reach its steady state, while a higher resistance leads to a quicker response time. Thus, when using the correct formula, understanding the relationship between inductance and resistance is crucial for predicting how quickly a coil responds to changes in voltage or current.

4. Zigzag transformers consist of two windings that are how many degrees out of phase?

A. 90 degrees

B. 120 degrees

C. 180 degrees

D. 270 degrees

Zigzag transformers are designed with two windings that are connected in such a way that they create a 120-degree phase shift between them. This unique configuration allows for effective neutral grounding and helps in balancing unbalanced loads in electrical systems. The 120-degree phase difference is a critical characteristic because it enables the transformer to provide phase shift that aids in the mitigation of harmonic distortion and can improve overall system stability. This design is particularly beneficial in power distribution systems that require grounding and voltage stabilization, making the 120-degree phase difference a key aspect of zigzag transformer functionality.

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5. In the context of electric circuits, inductance and resistance together determine what key characteristic of current flow?

A. Voltage

B. Frequency

C. Time to reach maximum current

D. Phase angle

The time to reach maximum current in an electric circuit is influenced by both inductance and resistance, making it a crucial characteristic of current flow in circuits that include inductors. When an alternating current (AC) or a step function in a direct current (DC) is applied to an inductor, the inductance has the effect of opposing changes in current due to its ability to store energy in a magnetic field. This opposition to change results in a delay, meaning the current does not immediately reach its maximum value. Resistance, on the other hand, also plays a role in how quickly the current can increase. Higher resistance will limit the flow of current, thereby affecting the rate at which it increases. The combination of these two components – inductance, which influences how the current builds up due to stored energy, and resistance, which limits that current flow – determines the time it takes for the current to reach its maximum value. In circuits where inductance is significant, there's often a time constant (τ) given by the formula τ = L/R, where L is inductance and R is resistance. This time constant indicates how quickly the current reaches its steady-state value and is foundational in analyzing transient responses in circuits. In summary, the interplay between inductance

6. What is the primary advantage of using a series-connected line reactor?

A. Lower cost

B. Increased voltage level

C. Reduction of harmonics

D. Circuit protection

The primary advantage of using a series-connected line reactor is the reduction of harmonics. Line reactors are inductive components employed in electrical systems to smooth out current fluctuations and dampen voltage spikes. When connected in series with a power supply or motor, these reactors help mitigate the effects of harmonic distortion. Harmonics are generated by non-linear loads and can lead to overheating of equipment, increased losses, and potential interference with communication lines. By introducing the series reactor, the impedance of the circuit increases, which helps to limit the amplitude of the harmonic currents and thereby reduces the total harmonic distortion (THD). This not only improves the efficiency of the system but also extends the life of electrical equipment by minimizing stress caused by harmonics. The other options, although relevant in some contexts, do not capture the primary purpose of a series-connected line reactor as effectively as the reduction of harmonics does. For instance, while circuit protection is important, it is generally achieved through other means such as fuses or circuit breakers, and line reactors specifically target harmonic issues. Similarly, lower cost and increased voltage level are not inherent benefits of using a line reactor; in fact, adding a reactor typically involves additional costs, and voltage levels are generally determined by the system design rather

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7. In a general industrial application, what kind of reading is acceptable for a new grounding system?

A. 1 ohm

B. 3 ohms

C. 5 ohms

D. 10 ohms

In a general industrial application, a reading of 5 ohms for a new grounding system is considered acceptable because it reflects a balance between safety and practicality. Grounding systems are essential for reducing the risk of electrical shock and ensuring the safe operation of electrical equipment by providing a path for fault current. A grounding resistance reading of 5 ohms indicates that the grounding system is adequately low enough to facilitate effective fault current flow, which helps to protect personnel and equipment in the event of a fault. Although lower resistance values are often preferred for enhanced safety—such as 1 ohm or 3 ohms—5 ohms is a widely accepted standard that aligns with various industry practices and regulations. Setting the standard at 10 ohms or higher may compromise safety and increase the risk of excessive voltage on exposed conductive parts during fault conditions. Thus, while options at 1 ohm or 3 ohms may be advantageous, 5 ohms serves as a practical threshold for many industrial applications.

8. When converting the vector (-5.0, -7.0) into magnitude/angle form, what is the magnitude?

A. 7.2

B. 8.6

C. 9.5

D. 10.0

To find the magnitude of the vector (-5.0, -7.0), we use the formula for the magnitude of a vector, which is derived from the Pythagorean theorem. The magnitude is calculated as follows: Magnitude = $\sqrt{(x^2 + y^2)}$ Here, x = -5.0 and y = -7.0. Plugging in the values: Magnitude = $\sqrt{((-5.0)^2 + (-7.0)^2)}$ = $\sqrt{(25 + 49)}$ = $\sqrt{74}$ ≈ 8.6 This calculation leads to a magnitude result of approximately 8.6, confirming the correctness of this answer. Thus, when converting the vector into magnitude/angle form, the magnitude is accurately found to be approximately 8.6.

9. In modern EHV circuit breakers, what is the approximate operating time from the receipt of a trip signal to final contact separation?

A. 0.01 seconds

B. 0.03 seconds

C. 0.05 seconds

D. 0.1 seconds

The approximate operating time for modern EHV (Extra High Voltage) circuit breakers from the receipt of a trip signal to final contact separation is around 0.03 seconds. This rapid operation is crucial for maintaining system stability and protecting equipment from faults and overloads. The quick actuation helps isolate faulty sections of the electrical network promptly, minimizing damage and maintaining the integrity of the overall system. In high voltage applications, every fraction of a second counts, and advancements in technology and design ensure that these circuit breakers can operate efficiently within this timeframe. The speed at which the circuit breakers operate is essential for preventing cascading failures and protecting sensitive equipment from fault conditions. Therefore, the choice indicating 0.03 seconds accurately reflects the high-performance standards expected in modern EHV circuit breaker applications.

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10. When does resonance in electrical systems occur?

A. When transformers are overloaded

B. When harmonic currents interact with system impedance

C. When high voltage is applied

D. When capacitors are installed

Resonance in electrical systems occurs when harmonic currents interact with system impedance. This phenomenon happens typically in AC circuits and is characterized by a condition where the inductive and capacitive reactances are equal in magnitude, resulting in a significant increase in current at specific frequencies known as resonant frequencies. When harmonic currents, which are multiples of the fundamental frequency, are present in a system, they can interact with the system's impedance, leading to elevation in voltage and current levels. This interaction can produce unwanted effects such as voltage distortion, overheating, and even potential damage to components in the system. The other options do not accurately describe the conditions for resonance. For instance, transformer overload typically refers to excess power being drawn, while high voltage may not necessarily induce resonance without the proper conditions of inductance and capacitance being met. The installation of capacitors alone does not create resonance; instead, it is the interplay of these components with inductive elements and the system's frequency response that leads to resonance.

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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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