

ET ASNT LEVEL II PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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

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- 1. How can temperature affect the results of Electromagnetic Testing?**
 - A. It can change the dimensions of the material
 - B. It can affect the material's electrical conductivity
 - C. It can alter the electromagnetic field strength
 - D. It has no effect on the testing process
- 2. A system that indicates only the magnitude of variations in total coil impedance is called:**
 - A. Inductive reactance magnitude system
 - B. Feedback-controlled system
 - C. Impedance-magnitude system
 - D. Impedance vector analysis system
- 3. What term defines the difference between the actual instrument output and the expected output as defined by a straight line calibration curve?**
 - A. phase shift
 - B. nonlinearity
 - C. lift-off
 - D. skin effect
- 4. What impact do environmental conditions have on ET?**
 - A. They have no impact on instrument performance
 - B. They only affect visual inspections
 - C. They can affect signal quality and test results
 - D. They enhance the reliability of the measurements
- 5. What happens to the eddy current flow in a conductive material as its thickness increases?**
 - A. It increases
 - B. It decreases
 - C. It remains constant
 - D. It fluctuates

- 6. What is one advantage of using digital data acquisition in ET?**
- A. It allows for manual data recording
 - B. It provides enhanced data analysis and sharing
 - C. It eliminates the need for calibration
 - D. It decreases testing time significantly
- 7. Which method is characterized by being a subdivision of the phase analysis method of testing?**
- A. Impedance method of testing
 - B. Modulation analysis method of testing
 - C. Phase analysis method of testing
 - D. None of the above
- 8. The heating effect in magnetic materials caused by rotating magnetic domains can be eliminated by what method?**
- A. Increasing the rate of displacement of the specimen through the coil
 - B. Magnetically saturating the test specimen
 - C. Decreasing the rate of displacement of the test specimen through the coil
 - D. Testing in an air-conditioned room
- 9. In a non-destructive testing context, what is the main purpose of eddy current testing?**
- A. To measure electrical resistance
 - B. To detect surface and near-surface flaws
 - C. To provide thermal conductivity measurements
 - D. To assess material density
- 10. Which testing method is best for detecting thin, shallow surface cracks?**
- A. Radiographic Testing
 - B. Magnetic Particle Testing
 - C. Liquid Penetrant Testing
 - D. Ultrasonic Testing

Answers

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

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Explanations

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1. How can temperature affect the results of Electromagnetic Testing?

- A. It can change the dimensions of the material
- B. It can affect the material's electrical conductivity**
- C. It can alter the electromagnetic field strength
- D. It has no effect on the testing process

The impact of temperature on electromagnetic testing is significant, particularly in relation to the material's electrical conductivity. As temperature increases, the electrical resistance of a conductive material typically rises, which in turn decreases its electrical conductivity. This change can directly affect the results of electromagnetic testing techniques, such as eddy current testing. Eddy currents are generated within conductive materials when subjected to a changing magnetic field. If the conductivity of the material changes due to temperature variations, the magnitude and distribution of these eddy currents will also change. This can lead to variations in the response signal measured during the testing process, potentially causing misinterpretations of material flaws or properties. Understanding this relationship is crucial for accurately assessing the integrity of materials using electromagnetic methods. Effective electromagnetic testing requires considerations of environmental conditions, including temperature, to ensure reliable and precise results.

2. A system that indicates only the magnitude of variations in total coil impedance is called:

- A. Inductive reactance magnitude system
- B. Feedback-controlled system
- C. Impedance-magnitude system**
- D. Impedance vector analysis system

The system that indicates only the magnitude of variations in total coil impedance is called the Impedance-magnitude system. This type of system focuses specifically on measuring the total impedance, which consists of both resistive and reactive components, but in this case, it does not provide information about the phase angle or any vector representation of the impedance. Such systems are particularly useful in applications where understanding the amplitude of impedance changes is crucial, such as in monitoring the condition of coils in various electrical systems. By concentrating solely on the magnitude of the impedance, users can gain insights into the differences caused by factors like changes in temperature, material properties, or the physical condition of the coil, aiding in maintenance or performance assessments. The other choices imply additional functionality or different focuses. The inductive reactance magnitude system suggests a focus only on inductive reactance rather than total impedance. A feedback-controlled system typically refers to a broader control mechanism and does not specifically pertain to measuring impedance. The impedance vector analysis system indicates a more comprehensive approach, which includes both magnitude and angle analysis. Thus, the Impedance-magnitude system is the most accurate description of the function in question.

3. What term defines the difference between the actual instrument output and the expected output as defined by a straight line calibration curve?

- A. phase shift
- B. nonlinearity**
- C. lift-off
- D. skin effect

The term that defines the difference between the actual instrument output and the expected output as defined by a straight line calibration curve is nonlinearity. Nonlinearity occurs when the response of the instrument does not follow a linear correlation with the input or measurement being evaluated. In a perfectly linear system, the output would directly correlate with the input; however, if there are deviations or discrepancies from this expected outcome, it signifies nonlinearity. Understanding nonlinearity is crucial because it can significantly affect the accuracy of measurements and interpretations in various testing scenarios. It indicates that the calibration curve is not perfectly straight and that different ranges of input may yield outputs that do not correspond to a simple linear relation, necessitating corrections or adjustments in the calibration process. In contrast, other terms such as phase shift, lift-off, and skin effect represent different phenomena in measurement and testing scenarios, making them unsuitable for defining the specific calibration deviation described in the question.

4. What impact do environmental conditions have on ET?

- A. They have no impact on instrument performance
- B. They only affect visual inspections
- C. They can affect signal quality and test results**
- D. They enhance the reliability of the measurements

Environmental conditions significantly influence the performance of electromagnetic testing (ET) due to their direct impact on the propagation of electromagnetic signals. Factors such as temperature, humidity, and electromagnetic interference can alter the characteristics of the materials being tested and can also affect the sensitivity and accuracy of the instruments used. For instance, high levels of moisture or extreme temperatures may change the electrical properties of the materials, thereby modifying the interaction between the electromagnetic field and the test object. Additionally, external noise from other electromagnetic sources can interfere with signal clarity, leading to distorted readings and inaccurate test results. In conclusion, understanding how environmental conditions affect signal quality and test outcomes is crucial for ensuring reliable data in ET applications.

5. What happens to the eddy current flow in a conductive material as its thickness increases?

- A. It increases
- B. It decreases**
- C. It remains constant
- D. It fluctuates

As the thickness of a conductive material increases, the eddy current flow typically decreases. This phenomenon can be attributed to the skin effect, which describes how alternating currents (including those responsible for generating eddy currents) tend to flow closer to the surface of a conductor rather than uniformly throughout its volume. At higher frequencies, eddy currents are concentrated in a thinner layer called the skin depth. As the material's thickness exceeds this skin depth, a smaller proportion of the total cross-section conducts the eddy current, resulting in a decrease in the overall eddy current flow. Thus, thicker materials tend to suppress the intensity of these currents because they restrict the effective area in which they can circulate, further leading to a reduction in their magnitude.

6. What is one advantage of using digital data acquisition in ET?

- A. It allows for manual data recording
- B. It provides enhanced data analysis and sharing**
- C. It eliminates the need for calibration
- D. It decreases testing time significantly

The advantage of using digital data acquisition in electromagnetic testing (ET) lies in its ability to provide enhanced data analysis and sharing. Digital systems allow for the immediate capture of data in a digital format, which can be processed more efficiently than analog data. This capability enables advanced analytical techniques, such as statistical analysis or data modeling, which can reveal insights that might be overlooked with manual methods. Furthermore, digital data can be easily shared across platforms and with different stakeholders, facilitating collaboration and improving the decision-making process. The integration with software tools allows for real-time data visualization and comparative analysis with historical data, which greatly enhances the overall efficacy of the testing process. This is in stark contrast to manual data recording, which is prone to human error and can delay data analysis. Calibration remains a necessary aspect of many testing procedures, and while there may be efficiencies in testing time, the primary advantage highlighted is centered around data analysis and sharing capabilities.

7. Which method is characterized by being a subdivision of the phase analysis method of testing?

- A. Impedance method of testing
- B. Modulation analysis method of testing
- C. Phase analysis method of testing**
- D. None of the above

The choice that reflects a subdivision of the phase analysis method of testing is the phase analysis method itself. This method focuses on examining signal phase changes in order to evaluate properties of materials or components. When a study or testing method is categorized as a subdivision, it typically indicates that it is a more specific application or variation of a broader technique. By referring to itself, the phase analysis method demonstrates that it is an umbrella term that encompasses various analytical techniques that involve phase-related measurements. Recognizing this helps reinforce understanding of broader testing methodologies and how they can be subdivided for specific applications or conditions. The other options do not represent subdivisions of the phase analysis method; rather, they refer to distinct testing methods that may utilize different principles or approaches in the context of evaluation or analysis.

8. The heating effect in magnetic materials caused by rotating magnetic domains can be eliminated by what method?

- A. Increasing the rate of displacement of the specimen through the coil
- B. Magnetically saturating the test specimen**
- C. Decreasing the rate of displacement of the test specimen through the coil
- D. Testing in an air-conditioned room

The heating effect in magnetic materials due to rotating magnetic domains can be effectively eliminated by magnetically saturating the test specimen. When a ferromagnetic material is subjected to a strong enough magnetic field, all of its magnetic domains align in the direction of the applied field, achieving magnetization saturation. This alignment minimizes the movement and rotation of the magnetic domains that would otherwise occur under varying magnetic fields, leading to less energy being dissipated as heat. In essence, saturating the specimen prevents the domains from flipping back and forth, which is the primary cause of heating. As a result, the magnetization reaches a point where further increases in the magnetic field do not lead to significant domain movement, thereby reducing unnecessary heating. Other options do not address the core issue of domain movement effectively. Increasing or decreasing the rate of displacement through the coil does not fundamentally change the magnetic properties of the material or its response to the magnetic field, while testing in a controlled environment, while it might help in some respects, does not directly prevent the heating effect caused by domain rotations.

9. In a non-destructive testing context, what is the main purpose of eddy current testing?

- A. To measure electrical resistance
- B. To detect surface and near-surface flaws**
- C. To provide thermal conductivity measurements
- D. To assess material density

Eddy current testing is primarily used to detect surface and near-surface flaws in conductive materials. The method works by inducing eddy currents within the test material through the use of an alternating magnetic field. When these eddy currents encounter flaws such as cracks, pits, or corrosion, the flow of the currents is disrupted, which can be detected and analyzed. This capability makes eddy current testing particularly effective for inspecting components where surface integrity is critical, such as in aerospace and automotive applications. The response from the eddy currents can reveal information about the size and shape of any flaws present, allowing inspectors to assess the health and safety of a component without causing damage. While other choices touch on different characteristics of materials, they do not directly align with the fundamental purpose of eddy current testing, which is aimed specifically at flaw detection rather than measuring resistance, thermal conductivity, or material density.

10. Which testing method is best for detecting thin, shallow surface cracks?

- A. Radiographic Testing
- B. Magnetic Particle Testing
- C. Liquid Penetrant Testing**
- D. Ultrasonic Testing

Liquid Penetrant Testing is particularly effective for detecting thin, shallow surface cracks due to its ability to highlight flaws that are open to the surface. This method involves applying a liquid with high wetting properties to the surface of the test material. The penetrant seeps into any discontinuities, such as cracks or porosity, that are open to the surface. After a predetermined amount of time, excess penetrant is removed, and a developer is applied. This developer draws out the penetrant from any defects, creating a visible indication of the flaw. This method is advantageous for inspecting non-porous materials and can reveal very fine surface breaches typically 0.001 inches wide or larger. The visual nature of the indications obtained allows for easy interpretation of results, making Liquid Penetrant Testing a widely used choice for surface defect detection. In contrast, the other methods would not perform as effectively for this specific application. Radiographic Testing utilizes X-rays or gamma rays to view internal structures and flaws but is not as sensitive to very shallow surface cracks. Magnetic Particle Testing is suitable for ferromagnetic materials but primarily identifies surface and near-surface discontinuities; however, its effectiveness diminishes on very thin cracks. Lastly, Ultrasonic Testing is designed for

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://etasntlevel2.examzify.com>

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

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