

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT) RADIOGRAPHIC TESTING PRACTICE TEST (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 long must a Level III individual typically wait before reapplying for certification after termination of employment?**
 - A. Six months
 - B. One year
 - C. No waiting period
 - D. Two years
- 2. Why is it important to choose the right x-ray film for examination?**
 - A. To fit within budget constraints
 - B. To ensure accurate and reliable results
 - C. To minimize exposure to radiation
 - D. To make the process quicker
- 3. What is a key requirement during the administration of written examinations?**
 - A. There can be no reference materials allowed.
 - B. Open book examinations are standard practice.
 - C. Tables, graphs, and charts may be used.
 - D. All questions must be essay-based.
- 4. For radiographing a 7" thick steel product, which gamma ray source is most appropriate?**
 - A. Ir-192
 - B. Co-60
 - C. Cs-137
 - D. Se-75
- 5. What does CP-105 include regarding training course outlines?**
 - A. General outlines for all qualifications
 - B. Specific outlines for listed methods
 - C. Recommendations for unsupervised training
 - D. Guidelines for mentoring only

- 6. What is the characteristic curve of an x-ray film independent of?**
- A. The quality of x- or gamma radiation
 - B. The time of exposure
 - C. The developer temperature
 - D. The size of the film
- 7. What characterizes Level I Practical examinations according to ANSI/ASNT CP-189?**
- A. Conducted only in a laboratory setting
 - B. Given using one or more test samples for each technique
 - C. Performed without supervision
 - D. Only theoretical components are assessed
- 8. The effectiveness of radiation shielding is determined by:**
- A. Type of radiation
 - B. Distance from the source
 - C. Material thickness
 - D. All of the above
- 9. What device is used to convert alternating current to direct current in x-ray machines?**
- A. Capacitor
 - B. Transformer
 - C. Rectifier
 - D. Inductor
- 10. What is the implication of having a minimum score requirement for examinations?**
- A. It ensures a baseline competency level among candidates.
 - B. It allows for subjective grading by instructors.
 - C. It reduces the preparation time for students.
 - D. It limits responses to multiple-choice only.

Answers

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

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Explanations

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1. How long must a Level III individual typically wait before reapplying for certification after termination of employment?

- A. Six months
- B. One year**
- C. No waiting period
- D. Two years

A Level III individual typically must wait one year before reapplying for certification after termination of employment. The waiting period is designed to ensure that the individual has sufficient time to gain relevant experience and knowledge, adhering to the standards set by certifying bodies. This period also allows for any necessary updates in industry practices and technologies, ensuring that recertification reflects the most current competencies and practices in the field. While some circumstances may allow individuals to forgo a waiting period, the standard one-year period emphasizes the commitment to maintaining high competency standards within the field of Radiographic Testing.

2. Why is it important to choose the right x-ray film for examination?

- A. To fit within budget constraints
- B. To ensure accurate and reliable results**
- C. To minimize exposure to radiation
- D. To make the process quicker

Choosing the right x-ray film for examination is essential because it directly impacts the accuracy and reliability of the results obtained from radiographic testing. Different types of x-ray films have varying sensitivities, contrast capabilities, and resolutions. Using the appropriate film ensures that subtle defects or features within the material being examined are adequately captured, providing a clear and detailed image for interpretation. When the film characteristics align with the examination requirements, the resulting radiograph will accurately reflect the internal features or flaws, allowing for reliable assessment and decision-making. This significance is magnified in critical applications such as structural integrity assessments, where accurate detection of defects is vital for safety and compliance with standards. While cost, radiation exposure, and speed of the process are all important considerations in radiographic testing, they do not overshadow the paramount need for producing accurate and reliable diagnostic images. Selecting the right film optimally balances these other factors while prioritizing the integrity and utility of the radiograph itself.

3. What is a key requirement during the administration of written examinations?

- A. There can be no reference materials allowed.
- B. Open book examinations are standard practice.
- C. Tables, graphs, and charts may be used.**
- D. All questions must be essay-based.

The key requirement during the administration of written examinations that highlights the use of tables, graphs, and charts emphasizes the importance of visual aids in testing comprehension and analytical skills. These tools can significantly enhance the communication of ideas, especially in technical fields like radiographic testing. Their presence allows candidates to interpret data more effectively and demonstrates their ability to integrate various forms of information, which is critical in understanding complex concepts. In technical examinations, especially within the realm of radiographic testing, visual representations can aid in clarifying questions and guiding responses, leading to a more comprehensive evaluation of a candidate's knowledge. This aligns with best practices in effective testing methodologies, ensuring that assessments cater to a range of learning styles and abilities. The other options relate to general examination formats but do not capture the specific utility and allowance of information forms, such as visual aids, which can bolster understanding and performance in assessments.

4. For radiographing a 7" thick steel product, which gamma ray source is most appropriate?

- A. Ir-192
- B. Co-60**
- C. Cs-137
- D. Se-75

The most appropriate gamma ray source for radiographing a 7-inch thick steel product is Cobalt-60 (Co-60). This is primarily due to its high energy and penetrating ability, which are essential characteristics when dealing with thick materials like steel. Cobalt-60 emits gamma rays with an energy of about 1.17 and 1.33 MeV, which provides sufficient penetration for inspecting dense and thick steel sections. This high energy allows for better visibility of internal structures and potential flaws within the steel, ensuring that the radiographic images produced are clear and informative. While the other gamma ray sources mentioned have their specific applications, they do not provide the necessary penetration capabilities for such a thick material. For example, Iridium-192, often used for medium thickness materials, would struggle with a 7-inch thick section due to its lower energy levels compared to Co-60. Similarly, Cesium-137 and Selenium-75 are generally suited for thinner sections or less dense materials, making them less effective for heavy steel components. In summary, Cobalt-60 is favored in this context due to its ability to produce high-quality radiographs of thick steel products, which is critical for accurate nondestructive testing.

5. What does CP-105 include regarding training course outlines?

- A. General outlines for all qualifications
- B. Specific outlines for listed methods**
- C. Recommendations for unsupervised training
- D. Guidelines for mentoring only

The choice indicating that CP-105 includes specific outlines for listed methods is correct because CP-105 is a document that provides detailed guidance on training and qualification requirements for various Nondestructive Testing (NDT) methods. It aims to standardize how training programs are structured, ensuring that they meet recognized criteria for effectiveness and comprehensiveness. By offering specific outlines for each listed method, CP-105 helps ensure that trainees receive focused and relevant instruction tailored to the NDT techniques they will be using. Focusing on specific methods is crucial because different NDT techniques, such as radiographic testing, ultrasonic testing, and others, have unique principles, equipment, and applications. Therefore, tailored outlines are essential for proper training, providing a clear framework that instructors can follow to teach each method effectively. In contrast, general outlines for all qualifications would lack the specificity needed to address the nuances of each method, and recommendations for unsupervised training would not align with the structured approach that CP-105 advocates. Additionally, simply providing guidelines for mentoring would not encompass the necessary instructional content and training methods outlined in CP-105, which includes comprehensive details for each technique.

6. What is the characteristic curve of an x-ray film independent of?

- A. The quality of x- or gamma radiation**
- B. The time of exposure
- C. The developer temperature
- D. The size of the film

The characteristic curve of an x-ray film, also known as the sensitometric curve, illustrates the relationship between the exposure to radiation and the resulting density on the film. It is primarily affected by factors intrinsic to the film itself, such as its sensitivity to radiation, the development process, and the specific conditions under which the film is processed. The quality of x- or gamma radiation refers to the energy and penetrating ability of the radiation. While different types of radiation can influence the image formation and contrast, the characteristic curve itself is formulated based on the film's response to a set standard of exposure. Therefore, the curve remains consistent and unaffected by variations in radiation quality. It is specifically designed to reflect the inherent properties of the film regardless of the external radiation conditions. In contrast, exposure time, developer temperature, and other parameters can directly alter the film's developed density and overall response. These factors are crucial in the processing of the film and can shift or modify the film's characteristic curve, but they do not define the intrinsic characteristics of the film itself. Thus, the correct understanding highlights that the quality of x- or gamma radiation is not a factor in determining the characteristic curve of the x-ray film.

7. What characterizes Level I Practical examinations according to ANSI/ASNT CP-189?

- A. Conducted only in a laboratory setting
- B. Given using one or more test samples for each technique**
- C. Performed without supervision
- D. Only theoretical components are assessed

The characterization of Level I Practical examinations according to ANSI/ASNT CP-189 is primarily defined by the use of one or more test samples for each technique involved in the evaluation. This approach ensures that the candidates demonstrate their capability in applying specific methods within a practical context, rather than relying solely on theoretical knowledge. The emphasis on using actual test samples allows for a comprehensive assessment of the candidate's practical skills in real-world conditions, which is crucial in fields like radiographic testing where hands-on competence is essential. By assessing candidates in this manner, the examination can effectively measure their ability to execute techniques accurately and efficiently. The other considerations, such as the setting of the examination or levels of supervision, do not encapsulate the core aspect of practical skill assessment that distinguishes Level I examinations. The presence of supervision, the setting, and the balance of practical versus theoretical assessment are important, but they are secondary to the fundamental requirement of using test samples to validate the operator's skills in radiographic testing.

8. The effectiveness of radiation shielding is determined by:

- A. Type of radiation
- B. Distance from the source
- C. Material thickness
- D. All of the above**

The determination of the effectiveness of radiation shielding primarily involves several interrelated factors, which include the type of radiation, the distance from the source, and the material thickness. Each of these elements plays a significant role in how well radiation can be attenuated or blocked. The type of radiation is crucial because different types of radiation interact with matter in various ways. For instance, alpha particles can be stopped by a sheet of paper, while gamma rays require much denser materials like lead or several inches of concrete for effective shielding. Understanding the specific characteristics of the radiation being dealt with ensures that the correct shielding material is selected. Distance from the source is another important factor due to the principle of the inverse square law, which states that the intensity of radiation diminishes with increasing distance from the source. By increasing the distance from the radiation source, the exposure can be significantly reduced, hence enhancing shielding effectiveness. Material thickness also directly affects the attenuation of radiation. Generally, greater thicknesses of shielding material provide better protective capabilities against radiation, as they increase the likelihood that incoming radiation particles will interact with the material and be absorbed or scattered. Considering all these factors collectively—type of radiation, distance from source, and material thickness—demonstrates that the overall effectiveness of radiation shielding

9. What device is used to convert alternating current to direct current in x-ray machines?

- A. Capacitor
- B. Transformer
- C. Rectifier**
- D. Inductor

The device that is used to convert alternating current (AC) to direct current (DC) in x-ray machines is a rectifier. In the context of x-ray machines, the rectifier plays a crucial role in ensuring that the current supplied to the x-ray tube is the appropriate type. Since x-ray tubes require DC for stable operation and optimal performance, the rectifier allows for the conversion of AC—which changes direction—into a unidirectional flow of DC. Rectifiers typically utilize diodes, which allow current to flow in only one direction, effectively blocking the reverse flow and creating a smooth DC output. This is essential for the consistent generation of x-rays, as fluctuations in current could lead to unstable x-ray production and potential damage to the x-ray tube. The other devices mentioned serve different purposes. Capacitors are used to store electrical energy and can smooth out fluctuations in voltage but do not convert AC to DC. Transformers are responsible for modifying voltage levels between circuits but do not perform current conversion. Inductors store energy in a magnetic field and are not directly involved in the AC to DC transition either.

10. What is the implication of having a minimum score requirement for examinations?

- A. It ensures a baseline competency level among candidates.**
- B. It allows for subjective grading by instructors.
- C. It reduces the preparation time for students.
- D. It limits responses to multiple-choice only.

Having a minimum score requirement for examinations serves a crucial role in ensuring that candidates possess a baseline competency level. This standard guarantees that all individuals passing the examination have demonstrated a sufficient understanding of the subject matter and are capable of applying their knowledge effectively in practical situations. It serves to maintain the integrity and professionalism of the field, as those who will be operating in safety-critical environments need to have proven their knowledge and skills adequately. Additionally, establishing a minimum score can help to create a uniform standard across different candidates, making it easier for employers and organizations to assess the readiness and capability of individuals in the workforce. This is particularly pertinent in fields like radiographic testing, where precise knowledge and skills are essential for ensuring safety and quality in critical applications.

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://asnt-rt.examzify.com>

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

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