

Radiologic Technology (RT) Entrance Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of questions,

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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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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

- 1. Where should the central ray be centered for an AP supine adult chest projection?**
 - A. At the jugular notch**
 - B. 3 to 4 inches below the jugular notch**
 - C. At the midpoint of the sternum**
 - D. At the level of T7 vertebra**
- 2. How does the principle of "informed consent" apply in radiologic technology?**
 - A. Patients must be informed about the procedure, including risks and benefits, before consent**
 - B. Patients can sign consent without explanation of the procedure**
 - C. Procedures can be done without patient knowledge**
 - D. Consent is only required for experimental procedures**
- 3. Why is patient history important in radiologic assessments?**
 - A. It helps determine appropriate imaging techniques and identify potential risks**
 - B. It is not relevant to imaging decisions**
 - C. It only matters for surgical procedures**
 - D. It is used to document the patient's previous illnesses**
- 4. An optimal diagnostic quality radiograph is defined as one that is:**
 - A. Enhanced with digital image processing**
 - B. Always within acceptable limits**
 - C. Always easy to interpret**
 - D. Perfectly exposed without any artifacts**
- 5. Which of the following terms describes positioning in relation to the body's midline?**
 - A. Medial**
 - B. Lateral**
 - C. Anterior**
 - D. Posterior**

- 6. What effect does an increase in linear energy transfer (LET) have on relative biologic effectiveness (RBE)?**
- A. RBE decreases**
 - B. RBE remains constant**
 - C. RBE increases**
 - D. RBE is unaffected**
- 7. How much rotation from an AP position of the ankle is typically required to produce an AP mortise projection?**
- A. 5-10 degrees**
 - B. 10-15 degrees**
 - C. 15-20 degrees**
 - D. 20-25 degrees**
- 8. What is the primary purpose of using protective aprons in radiologic procedures?**
- A. To enhance patient comfort**
 - B. To reduce radiation exposure to the patient and technologist**
 - C. To assist in accurate positioning of patients**
 - D. To prevent contamination of equipment**
- 9. What safety precaution should radiologic technologists take when performing procedures on pregnant patients?**
- A. Increase radiation exposure**
 - B. Minimize radiation exposure and assess risks versus benefits**
 - C. Use only non-invasive methods**
 - D. Perform all imaging procedures without exception**
- 10. Why is it important to verify a patient's identity before a procedure?**
- A. To assign them to a specific hospital room**
 - B. To prevent errors and ensure proper patient care**
 - C. To prepare the patient's insurance paperwork**
 - D. To minimize the time spent on the procedure**

Answers

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

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Explanations

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1. Where should the central ray be centered for an AP supine adult chest projection?

- A. At the jugular notch**
- B. 3 to 4 inches below the jugular notch**
- C. At the midpoint of the sternum**
- D. At the level of T7 vertebra**

For an AP supine adult chest projection, the central ray should be centered approximately 3 to 4 inches below the jugular notch. This positioning ensures that the radiograph captures the thoracic anatomy appropriately, including the lungs and the heart's silhouette, while accounting for the configuration and orientation of the subject in a supine position. The jugular notch serves as a reliable external landmark, and the specified distance below it places the central ray at the level around T7, which is critical for optimal imaging of the chest structures. Centering too high can lead to omitted important anatomical details, like the diaphragm, while centering too low may result in a lack of necessary upper lung imagery. Understanding the anatomical reference points and their relationship to the vertebral landmarks is fundamental in achieving a quality radiographic image in various patient positioning scenarios.

2. How does the principle of "informed consent" apply in radiologic technology?

- A. Patients must be informed about the procedure, including risks and benefits, before consent**
- B. Patients can sign consent without explanation of the procedure**
- C. Procedures can be done without patient knowledge**
- D. Consent is only required for experimental procedures**

The principle of "informed consent" is a fundamental ethical and legal requirement in healthcare, including radiologic technology. It emphasizes that patients have the right to be fully informed about the procedures they will undergo. This includes understanding the specifics of the procedure, potential risks, benefits, and any alternatives that may be available. When patients are adequately informed, they are empowered to make educated decisions regarding their healthcare. This ensures that they are not only participating in their care but also protecting their autonomy as individuals. Therefore, prior to any radiologic procedure, obtaining informed consent ensures that patients understand what to expect, which enhances their overall experience and trust in the healthcare system. In contrast, the other options do not uphold the principles of informed consent. Signing consent without an explanation undermines patient autonomy and may lead to dissatisfaction or harm if patients undergo procedures without fully understanding them. Performing procedures without patient knowledge breaches ethical standards and can lead to legal consequences, as patients have the right to be informed and involved in their healthcare decisions. Lastly, the notion that consent is only required for experimental procedures fails to recognize that informed consent is necessary for all medical procedures, not just those that are experimental in nature.

3. Why is patient history important in radiologic assessments?

- A. It helps determine appropriate imaging techniques and identify potential risks**
- B. It is not relevant to imaging decisions**
- C. It only matters for surgical procedures**
- D. It is used to document the patient's previous illnesses**

Patient history plays a crucial role in radiologic assessments primarily because it helps determine appropriate imaging techniques and identify potential risks associated with the procedure. Understanding a patient's medical background, including prior illnesses, surgeries, and allergies, enables the radiologic technologist to select the most suitable imaging modality—such as X-ray, CT, MRI, or ultrasound—that not only addresses the clinical question but also minimizes the patient's risk of potential complications, such as allergic reactions to contrast materials or radiation exposure. For example, if a patient has a history of renal issues, certain imaging techniques involving contrast agents may be avoided to prevent further kidney damage. Additionally, knowing the patient's previous health conditions aids in accurately interpreting images and recognizing any changes or abnormalities relevant to their current complaints. Overall, gathering patient history enhances the safety, effectiveness, and quality of radiologic procedures, ensuring better patient care.

4. An optimal diagnostic quality radiograph is defined as one that is:

- A. Enhanced with digital image processing**
- B. Always within acceptable limits**
- C. Always easy to interpret**
- D. Perfectly exposed without any artifacts**

An optimal diagnostic quality radiograph is best defined as one that is always within acceptable limits. This definition encompasses several essential factors that contribute to a quality image in radiology. These factors include proper exposure settings, appropriate positioning of the patient, adequate contrast, and resolution. When a radiograph falls within acceptable limits, it ensures that the image will provide the necessary diagnostic information without being excessively overexposed or underexposed, which could hinder the visualization of anatomical structures or pathological conditions. The idea of being "within acceptable limits" acknowledges that while perfection in radiographic quality is desirable, it is often impractical to achieve perfect images in every scenario due to various variables in clinical practice. Acceptable limits allow for slight variations while still ensuring the diagnostic utility of the image. This definition is more encompassing and practical compared to the other options. For instance, while enhancing images with digital processing can improve quality, it is not necessary for a radiograph to be classified as having optimal diagnostic quality. Similarly, an image that is always easy to interpret or perfectly exposed without any artifacts does not consider the variability in clinical settings and the importance of maintaining sufficient diagnostic information within acceptable standards.

5. Which of the following terms describes positioning in relation to the body's midline?

- A. Medial**
- B. Lateral**
- C. Anterior**
- D. Posterior**

The term "medial" refers to a position that is closer to the midline of the body. In anatomical terms, the midline is an imaginary line that divides the body into equal left and right halves. When something is described as medial, it means it is situated towards this centerline, in contrast to other terms that indicate different orientations or relationships to the body's midline or planes. For instance, when describing limbs or structures, a medial position would be one that is nearer to the center of the body, such as the nose being medial to the cheeks. Understanding the concept of medial is crucial in fields such as radiologic technology, where precise anatomical orientation is important for imaging purposes and for accurately assessing patient conditions.

6. What effect does an increase in linear energy transfer (LET) have on relative biologic effectiveness (RBE)?

- A. RBE decreases**
- B. RBE remains constant**
- C. RBE increases**
- D. RBE is unaffected**

An increase in linear energy transfer (LET) is associated with an increase in relative biologic effectiveness (RBE). LET refers to the amount of energy that radiation transfers to the material it passes through per unit distance, and it is generally higher for more densely ionizing radiation, such as alpha particles, compared to low LET radiation, like X-rays or gamma rays. As LET increases, the ionization effects on biological tissues become more significant. This means that high-LET radiation inflicts more damage per unit of absorbed dose, primarily because it produces more clustered or complex damage to DNA and other critical cellular structures. This kind of damage is more difficult for the cell to repair than the damage caused by low-LET radiation. Consequently, the RBE, which is a measure of the biological effectiveness of different types of radiation compared to a standard reference (usually X-rays), will increase with higher LET. Therefore, as the radiation becomes more effective in causing biological harm, the RBE rises, indicating that less dose is needed to achieve the same biological effect compared to low LET types of radiation. This relationship highlights the importance of understanding LET and RBE in radiological protection and therapy.

7. How much rotation from an AP position of the ankle is typically required to produce an AP mortise projection?

- A. 5-10 degrees**
- B. 10-15 degrees**
- C. 15-20 degrees**
- D. 20-25 degrees**

To create an accurate AP mortise projection of the ankle, a specific degree of rotation is essential to visualize the joint space between the tibia, fibula, and the tarsal bones. Typically, a rotation of 15 to 20 degrees from the anteroposterior (AP) position is required. This degree of rotation allows the fibula to move slightly away from the tibia within the image, effectively positioning the talofibular joint in the central part of the radiograph. Achieving this rotation helps to open the mortise joint, giving better visualization of the entire ankle joint, particularly the lateral and medial malleoli. This projection is crucial in evaluating joint integrity and any potential pathology, such as fractures or dislocations. The necessity of the 15 to 20 degrees of rotation over other values is based on both anatomical considerations and practical imaging techniques to optimize the clarity of the joint space.

8. What is the primary purpose of using protective aprons in radiologic procedures?

- A. To enhance patient comfort**
- B. To reduce radiation exposure to the patient and technologist**
- C. To assist in accurate positioning of patients**
- D. To prevent contamination of equipment**

The primary purpose of using protective aprons in radiologic procedures is to reduce radiation exposure to both the patient and the technologist. During radiologic examinations, there is a potential risk of radiation exposure from X-rays or other imaging modalities, which can be harmful in high doses. Protective aprons, typically made of lead or similar materials, act as a barrier to shield vital organs and tissues from scatter radiation, thereby minimizing the risk of radiation-related injuries. This protective measure is essential for maintaining safety protocols in the healthcare environment, as repeated exposure can lead to long-term health effects. While patient comfort, accurate positioning, and preventing contamination are important aspects of radiologic practices, the fundamental goal of protective aprons specifically relates to radiation safety. This focus on minimizing exposure is what makes the use of aprons a critical component in the practice of radiologic technology.

9. What safety precaution should radiologic technologists take when performing procedures on pregnant patients?

- A. Increase radiation exposure**
- B. Minimize radiation exposure and assess risks versus benefits**
- C. Use only non-invasive methods**
- D. Perform all imaging procedures without exception**

Minimizing radiation exposure while assessing risks versus benefits is a critical safety precaution for radiologic technologists working with pregnant patients. This approach recognizes that the developing fetus is more sensitive to radiation compared to adults, and that exposure during pregnancy can potentially lead to harmful effects. Therefore, technologists must carefully consider whether the imaging procedure is necessary and weigh the diagnostic benefits against the potential risks to both the mother and fetus. By minimizing radiation exposure, technologists can employ techniques such as using the lowest possible dose of radiation, considering alternative imaging modalities that do not utilize ionizing radiation, and collating comprehensive clinical information to justify the need for the procedure. This cautious and informed approach not only aligns with ethical standards of patient care but is also in accordance with regulatory guidelines aimed at protecting vulnerable populations, especially during pregnancy. The other options either suggest increasing exposure or advocating for blanket imaging without consideration of the individual patient's situation, which runs counter to established safety practices. Hence, the emphasis on a risk-benefit assessment is fundamental to ensuring safe and responsible imaging for pregnant patients.

10. Why is it important to verify a patient's identity before a procedure?

- A. To assign them to a specific hospital room**
- B. To prevent errors and ensure proper patient care**
- C. To prepare the patient's insurance paperwork**
- D. To minimize the time spent on the procedure**

Verifying a patient's identity before a procedure is crucial primarily to prevent errors and ensure proper patient care. This step is essential in the healthcare setting to avoid any potential mix-ups that could lead to administering treatments, medications, or procedures to the wrong patient. Such errors can result in serious harm or complications and may undermine the overall trust in healthcare professionals. Ensuring accurate identification helps maintain patient safety and promotes effective communication among healthcare providers, which is vital for delivering the best possible care. While other aspects like assigning hospital rooms or preparing insurance paperwork have their importance, they do not directly impact the immediate safety and well-being of the patient undergoing a procedure. The primary goal of confirming a patient's identity is to prioritize their safety and to provide appropriate and accurate treatment based on their specific medical history and needs.

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://rtentrance.examzify.com>

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