

RADIOLOGIC TECHNOLOGY (RT) ENTRANCE 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. What is the fundamental principle of radiologic imaging based on?**
 - A. The speed of sound in tissues
 - B. The differential absorption of radiation by different tissues
 - C. The electrical conductivity of tissues
 - D. The use of contrast media to enhance clarity
- 2. Which basic projection of the elbow is best for demonstrating the trochlear notch in profile?**
 - A. AP projection
 - B. Lateral projection
 - C. Medial oblique projection
 - D. Radial head projection
- 3. Which factor is least likely to affect image contrast in radiography?**
 - A. Filtration
 - B. mAs
 - C. kVp
 - D. Patient positioning
- 4. What is the purpose of patient positioning during imaging?**
 - A. To obtain the best images for diagnostic purposes while ensuring patient safety
 - B. To ensure patients are comfortable
 - C. To minimize the time required for imaging
 - D. To prepare the patient for sedation
- 5. How does beam filtration affect patient dose?**
 - A. By increasing radiation exposure
 - B. By removing low energy photons
 - C. By limiting the size of the beam
 - D. By altering the beam direction

- 6. What could be a consequence of inappropriately high radiation doses?**
- A. No impact on health
 - B. Increased risk of radiation-induced injuries or illness
 - C. Improvement in tissue healing
 - D. Potential for enhanced imaging quality
- 7. What type of disease transmission can occur if a radiologic technologist does not clean equipment after an examination?**
- A. Airborne transmission
 - B. Fomite transmission
 - C. Vector transmission
 - D. Direct contact transmission
- 8. Which type of projection is best used to assess the cervical spine's lateral view during injury evaluation?**
- A. AP projection
 - B. Lateral projection
 - C. Oblique projection
 - D. AP axial projection
- 9. In radiologic technology, what does the term "exposure" refer to?**
- A. The quality of the imaging technique
 - B. The duration of the imaging procedure
 - C. The amount of ionizing radiation arriving at a surface
 - D. The size of the imaging area
- 10. What is the primary purpose of using a grid in radiography?**
- A. To enhance image brightness
 - B. To reduce patient exposure
 - C. To improve image contrast
 - D. To minimize motion blur

Answers

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

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Explanations

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1. What is the fundamental principle of radiologic imaging based on?

- A. The speed of sound in tissues
- B. The differential absorption of radiation by different tissues**
- C. The electrical conductivity of tissues
- D. The use of contrast media to enhance clarity

The fundamental principle of radiologic imaging is based on the differential absorption of radiation by different tissues. This principle is crucial because various tissues in the body have distinct atomic compositions and densities, which affect how they interact with radiation. For example, dense tissues such as bones absorb more radiation, appearing lighter on images, while less dense tissues, like muscles or fat, absorb less and appear darker. This differential absorption allows radiologic imaging techniques, such as X-rays, CT scans, and MRI, to create contrasting images that can be interpreted by healthcare professionals to assess the condition of internal structures. Understanding this principle is essential for developing accurate diagnostic images and explaining the physiological differences among various body tissues during imaging procedures. Other factors, such as the use of contrast media, can enhance imaging clarity but are not fundamental principles. Similarly, while sound speed and electrical conductivity have roles in other medical imaging technologies, they do not apply to the foundational operation of radiologic imaging concerning radiation absorption.

2. Which basic projection of the elbow is best for demonstrating the trochlear notch in profile?

- A. AP projection
- B. Lateral projection**
- C. Medial oblique projection
- D. Radial head projection

The lateral projection of the elbow is best for demonstrating the trochlear notch in profile. In this projection, the elbow is positioned at a 90-degree angle, allowing for a clear view of the anatomical structures of the elbow joint. The trochlear notch, which is part of the ulna, is better visualized in this position because it places the structures in a plane that makes the notch appear prominently outlined without overlapping. In contrast, the other projections do not provide the same level of detail or clarity for evaluating the trochlear notch. The AP projection tends to show the entire elbow but does not focus on the profile of the notch. The medial oblique projection can help visualize some parts of the ulna and surrounding structures but does not present the trochlear notch as distinctly as the lateral view. The radial head projection is specifically designed to view the radial head and to assess for fractures, but it does not adequately demonstrate the trochlear notch in profile.

3. Which factor is least likely to affect image contrast in radiography?

- A. Filtration
- B. mAs
- C. kVp
- D. Patient positioning**

In radiography, image contrast refers to the difference in density between the various structures within an image. This contrast can be influenced by several factors, each playing a distinct role in image formation. Filtration, kV (kilovolt peak), and mAs (milliamperes per second) are key technical parameters that significantly impact image contrast. Filtration helps to reduce the low-energy (soft) X-rays that do not contribute effectively to image formation, thus improving contrast by enhancing the quality of the beam. Increasing kVp enhances the penetrating power of the X-rays, which influences the contrast by affecting the differential absorption of radiation by various tissues. The mAs controls the quantity of X-ray photons produced; an adequate amount is necessary for generating a quality image, but excessive mAs can potentially reduce contrast by creating an overly dense image. In contrast, patient positioning is crucial for obtaining optimal images but affects image quality primarily through the clarity of anatomy presented and the alignment of structures, rather than significantly altering the intrinsic contrast of the image itself. While improper positioning can lead to artifacts or obscure details, it does not inherently change the attenuation characteristics of the tissues being imaged. Thus, among the factors listed, patient positioning is least likely to impact the contrast

4. What is the purpose of patient positioning during imaging?

- A. To obtain the best images for diagnostic purposes while ensuring patient safety**
- B. To ensure patients are comfortable
- C. To minimize the time required for imaging
- D. To prepare the patient for sedation

The purpose of patient positioning during imaging is crucial for obtaining high-quality diagnostic images while prioritizing patient safety. Proper positioning helps to achieve the optimal perspective for the specific imaging study being performed, whether it is an X-ray, MRI, or CT scan. This ensures that the area of interest is clearly visualized, which is vital for accurate diagnosis and treatment planning. Good patient positioning also takes into account patient anatomy, the equipment being used, and the specific protocols of the imaging procedure. By positioning the patient correctly, the likelihood of image distortion is reduced, and the need for repeat examinations due to poor image quality is minimized. This not only improves diagnostic accuracy but also enhances patient safety by reducing unnecessary radiation exposure or the risk of injury to either the patient or the healthcare provider. While ensuring patient comfort, minimizing imaging time, and preparing patients for sedation are important aspects of patient care, the primary focus during imaging, particularly in terms of positioning, is to capture the best possible diagnostic images while ensuring that the patient remains safe throughout the procedure.

5. How does beam filtration affect patient dose?

- A. By increasing radiation exposure
- B. By removing low energy photons**
- C. By limiting the size of the beam
- D. By altering the beam direction

Beam filtration plays a crucial role in managing patient dose during radiologic procedures. One of its primary functions is to remove low-energy photons from the x-ray beam. Low-energy photons contribute to the overall dose received by the patient but have little diagnostic value, as they are more likely to be absorbed by the patient's tissues instead of penetrating them to form an image. By filtering out these low-energy photons, the quality of the x-ray beam is enhanced, leading to a reduction in patient exposure while still maintaining the necessary imaging quality. This process helps in minimizing unnecessary radiation without sacrificing diagnostic power. As a result, filtration is considered an important practice in radiographic techniques to ensure patient safety and effective imaging. Other options, like increasing radiation exposure, limiting beam size, or altering beam direction, do not directly pertain to the effectiveness of filtration in reducing patient dose, making them less relevant in this context.

6. What could be a consequence of inappropriately high radiation doses?

- A. No impact on health
- B. Increased risk of radiation-induced injuries or illness**
- C. Improvement in tissue healing
- D. Potential for enhanced imaging quality

The consequence of inappropriately high radiation doses is an increased risk of radiation-induced injuries or illness. When patients are exposed to high levels of radiation, it significantly raises the likelihood of adverse effects, including cellular damage, increased chances of developing cancer, and other long-term health complications. Radiation affects biological tissues by causing changes at the cellular level; excessive exposure can lead to mutations, impaired cell function, and, ultimately, the development of malignancies. The risks associated with high doses of radiation underline the importance of adhering to the ALARA (As Low As Reasonably Achievable) principle in radiologic practices to ensure patient safety and minimize potential harm from radiation exposure. The other choices do not accurately reflect the consequences of high radiation exposure, as no health impact and improvement in tissue healing misconstrue the serious risks associated with radiation. Similarly, the notion that higher radiation doses could enhance imaging quality fails to recognize that the benefit of improved imaging must be weighed against the significant risk of harm to the patient.

7. What type of disease transmission can occur if a radiologic technologist does not clean equipment after an examination?

- A. Airborne transmission
- B. Fomite transmission**
- C. Vector transmission
- D. Direct contact transmission

Fomite transmission refers to the transfer of pathogens through inanimate objects or surfaces, such as medical equipment or imaging devices. In the context of radiologic technology, if a radiologic technologist fails to clean equipment after an examination, any pathogens present on the surfaces can be transmitted to subsequent patients who come into contact with that same equipment. This underscores the importance of adhering to infection control protocols, as it can help prevent the spread of infections in healthcare settings. Airborne transmission involves infectious agents being suspended in the air and inhaled by individuals, which does not directly apply to equipment cleaning. Vector transmission pertains to diseases spread through vectors, like insects, rather than inanimate objects. Direct contact transmission involves the transfer of pathogens through physical contact with an infected person rather than through surfaces. Thus, fomite transmission is the most relevant type of transmission in this scenario.

8. Which type of projection is best used to assess the cervical spine's lateral view during injury evaluation?

- A. AP projection
- B. Lateral projection**
- C. Oblique projection
- D. AP axial projection

The lateral projection is the most effective method for assessing the cervical spine, particularly in the context of injury evaluation. This projection provides a clear view of the vertebral bodies, intervertebral discs, and the alignment of the cervical spine. It allows for the evaluation of potential fractures, dislocations, or other injuries that may not be as easily visualized in other views. In the lateral view, the natural curvature of the cervical spine can also be adequately assessed. Moreover, trauma to the cervical spine often results in alignment changes that are readily apparent in this projection, making it invaluable in acute injury scenarios. Other projections, such as the anteroposterior (AP) or oblique projections, do not provide the same level of detail for assessing lateral structures and alignment. The AP axial projection is typically used for visualization of the cervical vertebrae with an emphasis on the anterior structures but may not display lateral injuries effectively. Therefore, relying on the lateral projection ensures the most accurate assessment of the cervical spine in injury evaluations.

9. In radiologic technology, what does the term "exposure" refer to?

- A. The quality of the imaging technique
- B. The duration of the imaging procedure
- C. The amount of ionizing radiation arriving at a surface**
- D. The size of the imaging area

The term "exposure" in radiologic technology specifically refers to the amount of ionizing radiation that arrives at a surface, typically the image receptor or the patient's skin. This concept is crucial because it directly influences the quality and clarity of the radiographic image produced. Proper exposure is essential to ensure that the images provide accurate diagnostic information while minimizing the risk of radiation to the patient. When considering the other aspects mentioned in the question, while the quality of the imaging technique and the size of the imaging area are important factors in the imaging process, they do not define the term "exposure." Additionally, the duration of the imaging procedure relates to the time spent during the acquisition of images, but it is the amount of radiation that characterizes the exposure itself. Thus, understanding "exposure" as the amount of ionizing radiation is fundamental to effective radiologic practices.

10. What is the primary purpose of using a grid in radiography?

- A. To enhance image brightness
- B. To reduce patient exposure
- C. To improve image contrast**
- D. To minimize motion blur

The primary purpose of using a grid in radiography is to improve image contrast. Grids are designed to absorb scattered radiation that occurs when the X-ray beam passes through the patient. In radiographic imaging, scattered radiation can degrade the quality of the image by adding unwanted density, which can make the anatomic details less distinguishable. By utilizing a grid, the primary X-ray beam passes through while much of the scatter radiation is absorbed. This leads to a clearer and more defined image with better contrast, allowing for enhanced visualization of structures of interest. While the grid does not directly enhance image brightness or minimize motion blur, improving contrast indirectly contributes to the overall quality of the image by facilitating better differentiation of tissues. Additionally, grids can sometimes lead to increased patient exposure due to the need for higher exposure techniques to compensate for the reduction in overall X-ray intensity when using the grid. However, their primary function remains the enhancement of contrast in the resulting images.

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!

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