

AMERICAN SOCIETY OF RADIOLOGIC TECHNOLOGIST (ASRT) PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED 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. 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 a benefit of pursuing specialization in advanced imaging techniques?**
 - A. Decreased job responsibilities
 - B. Increased salary potential and job opportunities
 - C. Reduced patient interaction
 - D. Shorter work hours
- 2. What type of contrast medium dissociates into two molecular particles when dissolved in water?**
 - A. Nonionic agents
 - B. Hydroxyl groups
 - C. Amines
 - D. Ionic agents
- 3. What medication should be withheld from diabetic patients on the day of an iodinated contrast study?**
 - A. Furosemide (Lasix)
 - B. Insulin
 - C. Metformin
 - D. Diphenhydramine hydrochloride (Benadryl)
- 4. What type of transfer is used when a patient in a wheelchair can move to the exam table with assistance?**
 - A. Assisted standing pivot transfer
 - B. Standby assist transfer
 - C. 2-person lift
 - D. Hydraulic lift assist
- 5. Which of the following options does NOT help minimize patient exposure?**
 - A. A single-phase generator
 - B. Added tube filtration
 - C. Beam restriction
 - D. Low mAs settings

- 6. What is the primary cause of decreased spatial resolution on radiographs?**
- A. Failure to use a grid
 - B. Incorrect milliamperere-seconds (mAs)
 - C. Patient motion
 - D. Improper kilovoltage peak (kVp) selection
- 7. What is the highest need in Maslow's hierarchy of needs?**
- A. Self-actualization
 - B. Belonging and love
 - C. Esteem
 - D. Physiologic safety or comfort
- 8. If an emergency department patient is stable but breathing rapidly, how would a technologist describe this condition?**
- A. Bradypnea
 - B. Tachycardia
 - C. Bradycardia
 - D. Tachypnea
- 9. The photomultiplier tube in a phosphor plate reader system converts:**
- A. Light to electrons.
 - B. X-rays to electrons.
 - C. Light to digital values.
 - D. X-rays to digital values.
- 10. Which statement correctly describes the need to change technical factors from an AP lumbar spine to an oblique lumbar spine image?**
- A. The abdomen becomes denser; technique must increase
 - B. The abdomen becomes less dense; technique must decrease
 - C. The abdomen becomes thicker; technique must increase
 - D. The abdomen becomes less thick; technique must decrease

Answers

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

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Explanations

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1. What is a benefit of pursuing specialization in advanced imaging techniques?

- A. Decreased job responsibilities
- B. Increased salary potential and job opportunities**
- C. Reduced patient interaction
- D. Shorter work hours

Pursuing specialization in advanced imaging techniques provides a variety of benefits, with one of the most significant being increased salary potential and job opportunities. This specialization allows radiologic technologists to develop advanced skills and knowledge, making them more valuable in the healthcare job market. Employers often seek specialized professionals who can provide higher quality imaging services, thus creating a demand that can lead to better job stability and a greater range of employment opportunities. Additionally, specialized training often correlates with higher compensation rates. As technologists enhance their expertise and take on more complex tasks that require advanced imaging modalities—such as MRI, CT, or ultrasound—they may qualify for positions that offer higher salaries due to the increased responsibility and expertise involved in their roles. This financial incentive is a key motivating factor for many professionals considering additional training and certification in advanced imaging techniques.

2. What type of contrast medium dissociates into two molecular particles when dissolved in water?

- A. Nonionic agents
- B. Hydroxyl groups
- C. Amines
- D. Ionic agents**

The correct answer is that ionic agents dissociate into two molecular particles when dissolved in water. Ionic contrast media contain ionic compounds that separate into positively and negatively charged ions in solution. This dissociation is significant because it influences the osmotic properties of the solution, which can affect the patient's physiological response when the contrast medium is administered during imaging procedures. Understanding the behavior of ionic agents in solution is fundamental for radiologic technologists, as it helps in selecting the appropriate contrast medium based on the clinical scenario. The dissociation leads to higher osmolarity compared to nonionic agents, which remain intact in solution and do not break apart into separate ions. This can result in a higher risk of adverse effects such as allergic reactions or discomfort during the procedure when using ionic agents, which is critical knowledge for patient safety and care. The other choices, such as nonionic agents, hydroxyl groups, and amines, do not fit this description. Nonionic agents are designed to not dissociate into ions, which makes them generally safer with fewer side effects. Hydroxyl groups and amines are chemical groups rather than types of contrast media and do not pertain to the context of the question regarding the behavior of contrast materials in solution.

3. What medication should be withheld from diabetic patients on the day of an iodinated contrast study?

- A. Furosemide (Lasix)
- B. Insulin
- C. Metformin**
- D. Diphenhydramine hydrochloride (Benadryl)

Withholding metformin from diabetic patients the day of an iodinated contrast study is crucial due to the risk of lactic acidosis, particularly in patients with compromised renal function. Iodinated contrast agents can lead to contrast-induced nephropathy, which negatively affects kidney function. If kidney function is impaired, metformin, which is primarily excreted through the kidneys, may accumulate in the bloodstream, increasing the risk for the development of lactic acidosis. The standard guideline is to stop metformin at the time of the imaging procedure and not to resume it until at least 48 hours post-procedure, provided renal function is stable. This ensures that the patient's safety is prioritized, especially in the context of potential renal impairment caused by the contrast dye. While insulin and other medications may need adjustments, they do not carry the same direct risk of lactic acidosis when used in conjunction with iodinated contrast. Other medications like furosemide may be used as needed and diphenhydramine is usually irrelevant in this specific context. Hence, it is metformin that requires careful management in conjunction with iodinated contrast studies to minimize potential complications.

4. What type of transfer is used when a patient in a wheelchair can move to the exam table with assistance?

- A. Assisted standing pivot transfer**
- B. Standby assist transfer
- C. 2-person lift
- D. Hydraulic lift assist

The correct answer pertains to a method of transferring patients that allows for safety and support while encouraging the patient's mobility and independence. An assisted standing pivot transfer is the ideal choice for a patient who can move but may require assistance. This technique involves the caregiver providing support as the patient stands and pivots to sit on the exam table. This method is particularly useful for patients in wheelchairs who have the capability to bear weight on their legs but still need help with balance or strength to complete the transfer safely. The assistance provided by the caregiver ensures that the patient is stable and minimizes the risk of falls during the movement. Other transfer methods listed do not align with the scenario presented. A standby assist transfer typically involves the caregiver being present to monitor the patient without direct physical assistance, which does not suit someone needing help. A 2-person lift would be used for patients who cannot assist at all or are too heavy for a single caregiver to safely transfer alone, making it an unsuitable option for someone who can move with assistance. A hydraulic lift assist is designated for patients who are completely dependent on others for movement and is not appropriate for those who can contribute to the transfer process.

5. Which of the following options does NOT help minimize patient exposure?

A. A single-phase generator

B. Added tube filtration

C. Beam restriction

D. Low mAs settings

Minimizing patient exposure during radiologic procedures is essential for ensuring patient safety and maintaining optimal image quality. The correct answer, which indicates a single-phase generator, does not contribute to minimizing patient exposure for several reasons. A single-phase generator produces a voltage waveform that leads to greater fluctuations in the x-ray beam. This results in less efficient x-ray output, requiring higher exposure times and, consequently, higher radiation doses to the patient for adequate image quality. In contrast, more advanced generators, such as three-phase or high-frequency generators, provide a more constant and efficient x-ray output, allowing for lower exposure settings while still maintaining image quality. This efficiency is crucial in reducing the overall radiation dose to patients. On the other hand, options like added tube filtration, beam restriction, and low mAs settings are all strategies employed to minimize patient exposure effectively. Added tube filtration serves to absorb lower-energy photons, reducing patient dose from scatter radiation. Beam restriction limits the size of the x-ray field to the area of interest, thereby minimizing exposure to surrounding tissues. Lower mAs settings reduce the amount of radiation used during the exposure, which directly decreases the dose the patient receives. These methods are critical in optimizing radiographic techniques while safeguarding patient health.

6. What is the primary cause of decreased spatial resolution on radiographs?

A. Failure to use a grid

B. Incorrect milliamperere-seconds (mAs)

C. Patient motion

D. Improper kilovoltage peak (kVp) selection

The primary cause of decreased spatial resolution on radiographs is patient motion. When a patient moves during the exposure of the radiograph, this movement can lead to blurring of the image. This blurriness results from the superimposition of multiple images as the radiation is recorded, effectively reducing the clarity and detail that can be visualized in that particular area of the radiograph. Spatial resolution refers to the ability of the imaging system to differentiate between small structures. In radiography, careful positioning and minimizing any movement during the exposure are critical for maintaining high spatial resolution. If a patient cannot remain still or if there is any unintentional movement, it will significantly impact the fidelity of the captured image, leading to a loss of detail and clarity.

7. What is the highest need in Maslow's hierarchy of needs?

- A. Self-actualization**
- B. Belonging and love
- C. Esteem
- D. Physiologic safety or comfort

Self-actualization represents the highest need in Maslow's hierarchy of needs. This level is concerned with the realization of personal potential, self-fulfillment, seeking personal growth, and peak experiences. Individuals who reach this stage are focused on becoming everything that they are capable of being, which involves pursuing goals that align with their values and interests. Maslow suggests that self-actualization can only be pursued once lower-level needs — such as physiological needs (food, water, warmth, rest), safety needs (security, safety), and belongingness and love needs (intimate relationships, friends) — have been met. Esteem needs, which include feelings of accomplishment and recognition, serve as precursors to reaching self-actualization as well. Therefore, understanding self-actualization as the culmination of personal development helps in recognizing why it occupies the pinnacle of the hierarchy.

8. If an emergency department patient is stable but breathing rapidly, how would a technologist describe this condition?

- A. Bradypnea
- B. Tachycardia
- C. Bradycardia
- D. Tachypnea**

The accurate description of a patient who is breathing rapidly is termed tachypnea. This condition is characterized by an increased respiratory rate, typically defined as more than 20 breaths per minute in adults. In the context of the emergency department, noting that a patient is stable while exhibiting tachypnea can indicate that although the patient is breathing faster than normal, they are not in immediate distress or exhibiting other signs of acute health failure. Other terms in this question refer to different physiological states: bradypnea indicates slow breathing, which does not apply here; tachycardia refers to a fast heart rate, while bradycardia denotes a slow heart rate; neither is relevant to the breathing rate. Thus, recognizing tachypnea as the correct term accurately reflects the patient's respiratory condition.

9. The photomultiplier tube in a phosphor plate reader system converts:

- A. Light to electrons.**
- B. X-rays to electrons.
- C. Light to digital values.
- D. X-rays to digital values.

The photomultiplier tube (PMT) in a phosphor plate reader system plays a crucial role in the detection process by converting light into an electrical signal. When a phosphor plate is exposed to ionizing radiation, it absorbs the energy and re-emits it as visible light. The PMT detects this emitted light and amplifies it, resulting in a stream of electrons proportional to the intensity of the light. This conversion is essential for digitizing the image and allows for further processing and analysis within the imaging system. The role of the PMT is specific to the light emitted from the phosphor material and does not involve direct conversion of X-rays or digital data. Understanding this function clarifies why the focus is on the light signal produced by the phosphors in response to radiation exposure. Thus, the correct choice highlights the primary function of the photomultiplier tube in the reading and processing of data from the phosphor plate.

10. Which statement correctly describes the need to change technical factors from an AP lumbar spine to an oblique lumbar spine image?

- A. The abdomen becomes denser; technique must increase
- B. The abdomen becomes less dense; technique must decrease
- C. The abdomen becomes thicker; technique must increase**
- D. The abdomen becomes less thick; technique must decrease

The chosen statement reflects a key understanding of how body positioning affects radiographic imaging, specifically concerning the technical factors used during the examination of the lumbar spine. When transitioning from an anteroposterior (AP) lumbar spine to an oblique lumbar spine image, there is indeed an increase in the thickness or volume of the tissue the X-ray beams must penetrate. In an AP view, the radiation primarily passes through structures positioned directly behind each other, while the oblique view requires the beam to traverse through a greater thickness of tissue, particularly because the body is angled. This increase in thickness necessitates an increase in technical factors, such as kilovoltage (kV) or milliamperere-seconds (mAs), to ensure adequate exposure and image quality. These adjustments are crucial for achieving a clear and diagnostic image by overcoming the additional density introduced by the body's anatomy in the oblique position. The understanding of which technical factors to modify based on body density and thickness is essential for producing optimal radiographic images.

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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:

<https://americansocietyofradiologictechnologists.examzify.com>

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

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