

Diagnostic Medical Sonography Assistant (DMSA) 190 Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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 term for the arm position that should be minimized by sonographers to reduce strain?**
 - A. Adduction**
 - B. Elevation**
 - C. Abduction**
 - D. Extension**

- 2. What term is used to describe the direction toward the front of the body?**
 - A. Posterior**
 - B. Ventral**
 - C. Dorsal**
 - D. Medial**

- 3. What does B-mode stand for in ultrasound imaging?**
 - A. Brightness mode**
 - B. Biological mode**
 - C. Binary mode**
 - D. Baseline mode**

- 4. What is the purpose of using ultrasound contrast agents?**
 - A. To increase the speed of ultrasound imaging**
 - B. To improve clarity of blood vessels and organs**
 - C. To provide a sterile environment for the procedure**
 - D. To measure blood pressure**

- 5. Which term refers to a plane that divides the body into superior and inferior parts?**
 - A. Frontal**
 - B. Sagittal**
 - C. Transverse**
 - D. Coronal**

- 6. The elbow is positioned in which direction relative to the hand?**
- A. Distal**
 - B. Proximal**
 - C. Medial**
 - D. Lateral**
- 7. Who discovered piezoelectricity?**
- A. The Curie Brothers**
 - B. Michael Faraday**
 - C. Isaac Newton**
 - D. James Clerk Maxwell**
- 8. When taking blood pressure, what does the first sound heard represent?**
- A. Diastolic pressure**
 - B. Mean arterial pressure**
 - C. Systolic pressure**
 - D. Pulmonary pressure**
- 9. What is considered the normal adult range for pulse rate?**
- A. 50-70 bpm**
 - B. 60-100 bpm**
 - C. 70-110 bpm**
 - D. 80-120 bpm**
- 10. Which of the following best describes high dynamic range imaging?**
- A. shows few shades of gray**
 - B. provides a low contrast image**
 - C. features many shades of gray**
 - D. is less sensitive to light**

Answers

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

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Explanations

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1. What is the term for the arm position that should be minimized by sonographers to reduce strain?

- A. Adduction**
- B. Elevation**
- C. Abduction**
- D. Extension**

The term that should be minimized by sonographers to reduce strain is abduction. In this context, abduction refers to the position where the arms are raised away from the body, creating tension in the shoulder and neck muscles. When sonographers hold their arms in an abducted position for extended periods, it can lead to discomfort and musculoskeletal strain. By keeping the arms closer to the body, which is an appropriate position during ultrasound procedures, sonographers can help maintain better posture and reduce the risk of injury. The importance of monitoring arm positioning is particularly relevant given the repetitive nature of sonography, which may exacerbate any strain produced by poor arm positioning. Ultimately, minimizing abduction during the performance of their duties is essential for maintaining the long-term health and comfort of sonographers.

2. What term is used to describe the direction toward the front of the body?

- A. Posterior**
- B. Ventral**
- C. Dorsal**
- D. Medial**

The term used to describe the direction toward the front of the body is "ventral." In anatomical terminology, "ventral" refers specifically to the front or anterior aspect of an organism. This term is particularly used in zoological contexts, where it denotes the belly or underside, but in human anatomy, it emphasizes the anterior side of the body. Understanding the anatomical positions and directional terms is crucial in medical fields, including diagnostic medical sonography, as it helps in accurately describing locations and orientations of structures being examined. This knowledge ensures clear communication among healthcare providers regarding anatomical locations and aids in effective patient assessments and imaging diagnostics. Other choices represent different anatomical terms: "posterior" denotes the back side of the body, "dorsal" generally refers to the back in humans and the upper side in quadrupeds, and "medial" indicates something closer to the midline of the body. Each term serves specific purposes in anatomical language, highlighting the importance of ventral as the correct term for indicating the front of the body.

3. What does B-mode stand for in ultrasound imaging?

- A. Brightness mode**
- B. Biological mode**
- C. Binary mode**
- D. Baseline mode**

B-mode stands for Brightness mode in ultrasound imaging. This technique is crucial because it produces a two-dimensional image of the scanned body part, where the brightness of each pixel corresponds to the amplitude of the reflected ultrasound waves. In simpler terms, the brighter the pixel, the stronger the echo, which typically indicates a denser or more reflective tissue boundary. The term "B-mode" signifies that the mode captures brightness levels as a representation of tissue structure and is fundamental in generating real-time images that allow for better visualization of anatomy, organ morphology, and potential abnormalities. Hence, B-mode is a foundational concept in ultrasound imaging that helps sonographers evaluate and diagnose medical conditions effectively.

4. What is the purpose of using ultrasound contrast agents?

- A. To increase the speed of ultrasound imaging**
- B. To improve clarity of blood vessels and organs**
- C. To provide a sterile environment for the procedure**
- D. To measure blood pressure**

Ultrasound contrast agents are used primarily to enhance the visualization of blood vessels and organs during ultrasound imaging. These agents improve the acoustic properties of the ultrasound images, allowing for better differentiation between structures and highlighting areas of interest, such as blood flow or lesions. The contrast agents typically contain gas-filled microbubbles that reflect sound waves more effectively than surrounding tissues, thereby improving the clarity of the images captured during the procedure. This enhanced clarity is particularly beneficial in assessing vascular conditions, diagnosing tumors, and guiding interventional procedures. The use of contrast agents helps in providing a more accurate diagnosis, which can ultimately aid in better patient management and treatment planning. The other options, while related to ultrasound technology, do not align with the primary purpose of contrast agents. For instance, contrast agents do not reduce the time taken for imaging or influence the sterility of the procedure; they also do not play a role in measuring blood pressure.

5. Which term refers to a plane that divides the body into superior and inferior parts?

- A. Frontal**
- B. Sagittal**
- C. Transverse**
- D. Coronal**

The term that refers to a plane dividing the body into superior and inferior parts is the transverse plane. The transverse plane, also known as the horizontal plane, runs perpendicular to the long axis of the body, resulting in upper (superior) and lower (inferior) sections when a body is cut along this plane. This plane is crucial for medical imaging techniques like CT and MRI, as it allows for clear visualization of structures in a cross-sectional view. In contrast, the frontal plane divides the body into anterior (front) and posterior (back) sections, while the sagittal plane separates it into left and right parts. The coronal plane, similar to the frontal plane, also involves splitting the body into front and back portions. Understanding these planes is fundamental in anatomy and medical imaging, as it helps in accurately describing the location and orientation of organs and structures within the body.

6. The elbow is positioned in which direction relative to the hand?

- A. Distal**
- B. Proximal**
- C. Medial**
- D. Lateral**

The elbow is positioned proximal to the hand. In anatomical terms, "proximal" refers to a structure being closer to the point of attachment or to the trunk of the body, indicating that the elbow is nearer to the shoulder compared to the hand. This means that when you consider the arm as a whole, the elbow is positioned above the hand in relation to the body's anatomy. Understanding the arrangement of the anatomical terms is crucial. Distal would imply that a structure is farther away from the point of attachment, which is not the case for the elbow and hand relationship. Medial refers to a position that is closer to the midline of the body, while lateral indicates being away from the midline. Neither of these terms accurately describes the positional relationship between the elbow and hand, making "proximal" the correct terminology for this anatomical reference.

7. Who discovered piezoelectricity?

- A. The Curie Brothers**
- B. Michael Faraday**
- C. Isaac Newton**
- D. James Clerk Maxwell**

The discovery of piezoelectricity is credited to the Curie brothers, Pierre and Jacques Curie, who made significant contributions to the field of crystallography in the late 19th century. They observed that certain crystals, when subjected to mechanical stress, generate an electric charge. This phenomenon is known as piezoelectricity and is fundamental in various applications, including ultrasound technology used in diagnostic medical sonography. The work of the Curie brothers laid the groundwork for understanding the relationship between mechanical pressure and electric charge in materials, which is critical for the development of piezoelectric transducers. These transducers are widely used in ultrasound machines to convert electrical signals into sound waves and vice versa. Their discovery has had lasting implications across multiple fields, including medical imaging, telecommunications, and sensor technology. In contrast, the contributions of the other figures listed do not pertain to piezoelectricity. Michael Faraday is known for his work in electromagnetism and electrochemistry, Isaac Newton is famous for his laws of motion and optics, and James Clerk Maxwell is recognized for formulating the classical theory of electromagnetic radiation. Each made significant scientific contributions, but they did not discover piezoelectricity.

8. When taking blood pressure, what does the first sound heard represent?

- A. Diastolic pressure**
- B. Mean arterial pressure**
- C. Systolic pressure**
- D. Pulmonary pressure**

The first sound heard during blood pressure measurement is indicative of systolic pressure. This sound occurs when the pressure in the cuff is released enough for blood to begin flowing through the artery, producing a clear "thump" sound known as Korotkoff sounds. At this point, the pressure in the artery is high enough to overcome the pressure being applied by the cuff, indicating the maximum pressure exerted on the arterial walls when the heart contracts. Systolic pressure is critical in assessing cardiovascular health as it reflects how effectively the heart pumps blood into the arteries. It is commonly recorded as the higher number in a blood pressure reading, with diastolic pressure, which is the lower number, representing the pressure in the arteries when the heart is at rest between beats. Understanding this concept is fundamental to accurately interpreting blood pressure readings and enhancing patient care.

9. What is considered the normal adult range for pulse rate?

- A. 50-70 bpm**
- B. 60-100 bpm**
- C. 70-110 bpm**
- D. 80-120 bpm**

The normal adult range for pulse rate is typically considered to be between 60 and 100 beats per minute (bpm). This range reflects the average resting heart rate for adults, which can vary based on factors like fitness level, age, and overall health. A pulse rate within this range indicates that the heart is functioning normally and efficiently in pumping blood throughout the body. Rates below 60 bpm may indicate bradycardia, while rates above 100 bpm may indicate tachycardia, both of which could be signs of underlying health issues that may require further evaluation. Therefore, understanding the normal range is crucial for assessing an individual's cardiovascular health during routine checks or when monitoring for potential health concerns.

10. Which of the following best describes high dynamic range imaging?

- A. shows few shades of gray**
- B. provides a low contrast image**
- C. features many shades of gray**
- D. is less sensitive to light**

High dynamic range imaging is characterized by its ability to represent a wide range of shades of gray in an image. This is essential in diagnostic medical sonography as it allows for a more accurate and detailed visualization of structures and tissues within the body. With many shades of gray, clinicians can identify subtle differences in tissue density, enhancing diagnostic capabilities and improving the quality of images produced. The technique captures a broader spectrum of light intensities, which translates into more detail in shadows and highlights within an image. This increased level of detail is critical for effective diagnosis and interpretation, enabling healthcare professionals to make more informed decisions based on the imaging results.

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://dmsa190.examzify.com>

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

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