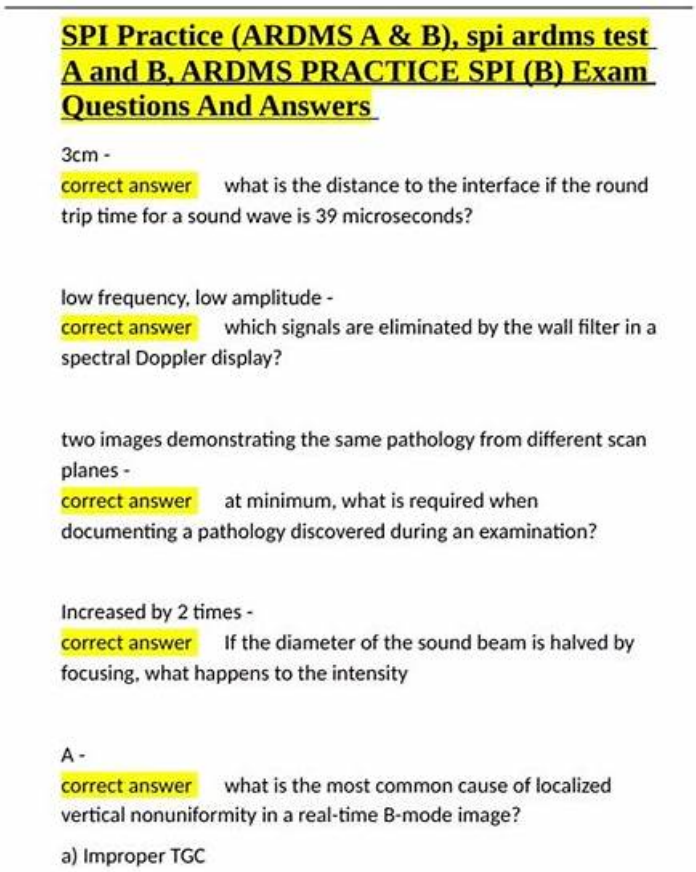
ARDMS SPI Braindumps Torrent - SPI Test Questions Answers



SPI Practice (ARDMS A & B), spi ardms test A and B, ARDMS PRACTICE SPI (B) Exam Questions And Answers

3cm -
correct answer what is the distance to the interface if the round trip time for a sound wave is 39 microseconds?

low frequency, low amplitude -
correct answer which signals are eliminated by the wall filter in a spectral Doppler display?

two images demonstrating the same pathology from different scan planes -
correct answer at minimum, what is required when documenting a pathology discovered during an examination?

Increased by 2 times -
correct answer If the diameter of the sound beam is halved by focusing, what happens to the intensity

A -
correct answer what is the most common cause of localized vertical nonuniformity in a real-time B-mode image?

a) Improper TGC

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ARDMS SPI Exam Syllabus Topics:

Topic	Details
Topic 1	• Perform Ultrasound Examinations: This section of the exam measures skills of Sonographers and covers how to conduct ultrasound procedures while ensuring patient safety and diagnostic accuracy. It includes understanding of imaging protocols, ergonomics, patient care, and the interaction between sound and tissue. Candidates are expected to demonstrate abilities to manage patient encounters, apply 3D • 4D and contrast imaging concepts, identify and correct artifacts, and follow confidentiality and privacy standards throughout the scanning process.

Topic 2	• Optimize Sonographic Images: This section of the exam measures skills of Diagnostic Medical Sonographers and assesses their ability to enhance image quality using advanced optimization techniques. It includes understanding axial, lateral, elevational, and temporal resolution, as well as manipulating gain, depth, magnification, and dynamic range. Examinees are expected to apply harmonic imaging, spatial compounding, and gray-scale techniques to produce clear, accurate diagnostic images.
Topic 3	• Provide Clinical Safety and Quality Assurance: This section of the exam measures skills of Clinical Ultrasound Supervisors and focuses on maintaining safety and quality standards in ultrasound practice. It includes infection control protocols, transducer and machine integrity checks, and quality assurance testing using tissue-mimicking phantoms. The section also requires familiarity with statistical parameters like sensitivity and specificity to evaluate diagnostic performance and ensure consistent, reliable imaging outcomes.
Topic 4	• Manage Ultrasound Transducers: This section of the exam measures skills of Ultrasound Technicians and focuses on the management and proper use of different types of transducers. It evaluates knowledge of transducer components, frequency selection, and application of various 2D, 3D, 4D, and nonimaging transducer concepts. Candidates must show they can choose the appropriate transducer for specific examinations and make necessary frequency adjustments to ensure image quality.
Topic 5	• Apply Doppler Concepts: This section of the exam measures skills of Vascular Sonographers and evaluates understanding and application of Doppler ultrasound principles. It includes knowledge of Doppler angle, flow dynamics, and color and spectral Doppler imaging. The section also covers eliminating aliasing, interpreting waveforms, applying continuous and pulsed wave Doppler, and optimizing Doppler gain and scale to accurately measure blood flow and velocity within vessels.

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ARDMS Sonography Principles and Instrumentation Sample Questions (Q70-Q75):

NEW QUESTION # 70
Based on the table in this image, what is the sensitivity?
A white square with black numbers and a white square with black numbers Description automatically generated

- A. 32/33
- B. 45/46
- C. 45/48
- D. 32/35

Answer: D

Explanation:
Comprehensive and Detailed Explanation From Exact Extract:
Sensitivity measures the test's ability to correctly identify true positives. It is calculated using the formula:
Sensitivity = True Positives / (True Positives + False Negatives)
From the table:
* True Positives (TP) = 32 (Noninvasive test positive & Gold Standard positive)
* False Negatives (FN) = 3 (Noninvasive test negative but Gold Standard positive) Thus:

Sensitivity = 32 / (32 + 3)
Sensitivity = 32 / 35
According to sonography instrumentation reference:

NEW QUESTION # 71
Which change would allow low velocities to be displayed in this spectral Doppler image?
A close-up of a ultrasound Description automatically generated

- A. Increase transmitted frequency
- B. Decrease compression
- C. Increase sample volume size
- D. Decrease wall filter

Answer: D

Explanation:
Comprehensive and Detailed Explanation From Exact Extract:
In the spectral Doppler display shown, the wall filter setting determines the lower limit of velocity signals that are displayed. A high wall filter removes low-velocity signals (such as end-diastolic flow or slow venous flow), while a lower wall filter allows both high and low velocities to be visualized.
According to the official Principles and Instrumentation documents:
"The wall filter eliminates low-frequency Doppler shifts, which correspond to low-velocity blood flow or motion artifacts. Decreasing the wall filter allows display of low-velocity flow components that may otherwise be filtered out."
* Decreasing compression (A) adjusts dynamic range but does not influence velocity detection.
* Increasing sample volume size (B) affects spatial resolution and signal amplitude but not velocity thresholds.
* Increasing transmitted frequency (C) may improve sensitivity but does not directly control the display of low velocities.
Therefore, the correct answer is D: Decrease wall filter.

NEW QUESTION # 72
Which color Doppler artifact is visualized in this image?

- A. Aliasing
- B. Bleed
- C. Twinkle
- D. Ghosting

Answer: A

Explanation:
The color Doppler image shows an artifact where high-velocity blood flow exceeds the Nyquist limit, resulting in color wrap-around or aliasing. This artifact is visualized as a mosaic pattern of colors that abruptly change, indicating that the velocity exceeds the color Doppler scale's maximum. Aliasing occurs when the sampling rate (pulse repetition frequency) is insufficient to accurately capture the high velocities, causing the display to cycle back to lower velocities.
Reference:
ARDMS Sonography Principles & Instrumentation Guidelines
Hagen-Ansert SL. Textbook of Diagnostic Ultrasonography. 8th ed. St. Louis, MO: Mosby; 2017.

NEW QUESTION # 73
Which image demonstrates appropriate spectral Doppler gain?

- A. Option A
- B. Option D
- C. Option C
- D. Option B

Answer: D

Explanation:
Option B demonstrates appropriate spectral Doppler gain. Appropriate gain settings ensure that the Doppler signal is adequately amplified without introducing excessive noise or artifacts. In Option B, the spectral waveform is clearly visible with distinct borders, and the background noise is minimal. In contrast, other options might show either under-gained (too little signal) or over-gained (excessive noise and signal) images, making it difficult to accurately interpret the spectral Doppler information.References:
* ARDMS Sonography Principles and Instrumentation guidelines
* "Understanding Ultrasound Physics" by Sidney K. Edelman

NEW QUESTION # 74
Which aspect(s) would best explain why the amplitude of the signal from reflector B in this diagram is less than that from reflector A?

- A. Propagation speed differences
- B. Attenuation
- C. Acoustic impedance differences
- D. Elasticity of the medium

Answer: B

Explanation:
Comprehensive and Detailed Explanation From Exact Extract:
As ultrasound travels through tissue, it experiences attenuation - a reduction in signal amplitude due to absorption, scattering, and reflection. The deeper the reflector, the greater the attenuation. Therefore, the signal from reflector B (deeper structure) is weaker than from reflector A (shallower structure) primarily due to attenuation.
According to Principles and Instrumentation:
"Attenuation is the reduction in ultrasound beam strength as it propagates through tissue, resulting in decreased signal amplitude from deeper structures." Elasticity affects stiffness but not amplitude directly.
Propagation speed differences cause refraction or displacement, not amplitude changes.
Acoustic impedance differences cause reflection strength variations at interfaces but do not account for depth-dependent amplitude reduction.
Therefore, the correct answer is A: Attenuation.

NEW QUESTION # 75
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