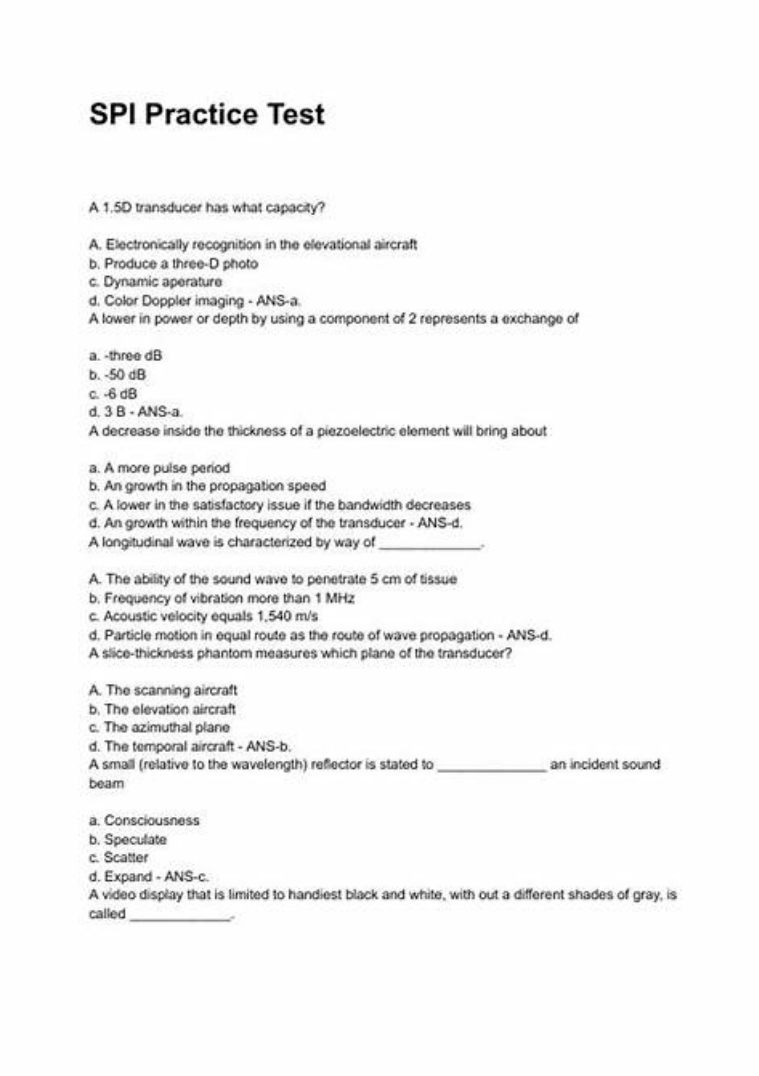
New SPI Test Test - SPI Latest Braindumps Sheet



SPI Practice Test

A 1.5D transducer has what capacity?

A. Electronically recognition in the elevational aircraft
b. Produce a three-D photo
c. Dynamic aperature
d. Color Doppler imaging - ANS-a.
A lower in power or depth by using a component of 2 represents a exchange of

a. -three dB
b. -50 dB
c. -6 dB
d. 3 B - ANS-a.
A decrease inside the thickness of a piezoelectric element will bring about

a. A more pulse period
b. An growth in the propagation speed
c. A lower in the satisfactory issue if the bandwidth decreases
d. An growth within the frequency of the transducer - ANS-d.
A longitudinal wave is characterized by way of _____.

A. The ability of the sound wave to penetrate 5 cm of tissue
b. Frequency of vibration more than 1 MHz
c. Acoustic velocity equals 1,540 m/s
d. Particle motion in equal route as the route of wave propagation - ANS-d.
A slice-thickness phantom measures which plane of the transducer?

A. The scanning aircraft
b. The elevation aircraft
c. The azimuthal plane
d. The temporal aircraft - ANS-b.
A small (relative to the wavelength) reflector is stated to _____ an incident sound beam

a. Consciousness
b. Speculate
c. Scatter
d. Expand - ANS-c.
A video display that is limited to handiest black and white, with out a different shades of gray, is called _____.

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Thousands of people are interested in earning the Sonography Principles and Instrumentation (SPI) certification exam because it comes with multiple career benefits. Actual4Labs have designed a product that contains the SPI latest questions. These ARDMS SPI Exam Dumps are ideal for applicants who have a short time and want to clear the Sonography Principles and Instrumentation (SPI) exam for the betterment of their future.

ARDMS SPI Exam Syllabus Topics:

Topic	Details
Topic 1	• Manage Ultrasound Transducers: It delves into 2D array transducer concepts, 3D • 4D transducer concepts, and nonimaging transducer concepts.
Topic 2	• Optimize Sonographic Images: The topic focuses on optimization of axial resolution concepts, optimization of lateral resolution concepts, optimization of elevational resolution concepts, optimization of temporal resolution concepts, and magnification techniques.

Topic 3	• Apply Doppler Concepts: It discusses Doppler wall filter concepts, Doppler sample gate concepts, y color priority over gray scale concepts, and concepts related to color Doppler map. Furthermore, it discusses concepts to eliminate aliasing, continuous wave Doppler concepts, and color Doppler scale concepts.
Topic 4	• Perform Ultrasound Examinations: This topic discusses patient care, sonographic ergonomic techniques, echogenicity, reverberation, and potential bioeffects. It also discusses beam steering concepts, panoramic imaging, 3D • 4D concepts, and contrast imaging concepts.
Topic 5	• Provide Clinical Safety & Quality Assurance: This topic covers universal infection control protocols, QA check on ultrasound machine, transducer integrity, ultrasound machine integrity, and statistical parameter concepts.

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ARDMS Sonography Principles and Instrumentation Sample Questions (Q75-Q80):

NEW QUESTION # 75
Which unfocused transducer will have the greatest divergence?

- A. 6 mm aperture, 6 MHz
- B. 6 mm aperture, 4 MHz
- C. 4 mm aperture, 4 MHz
- D. 4 mm aperture, 6 MHz

Answer: C

Explanation:
Transducer beam divergence is influenced by the aperture size and frequency. A smaller aperture and lower frequency result in greater beam divergence. Among the given options, the transducer with a 4 mm aperture and 4 MHz frequency will have the greatest divergence. This is because the smaller aperture size contributes to a wider beam spread, and the lower frequency also increases the divergence compared to higher frequencies.
Reference:
ARDMS Sonography Principles and Instrumentation guidelines
Kremkau, F. W. (2015). Diagnostic Ultrasound: Principles and Instruments. Elsevier.

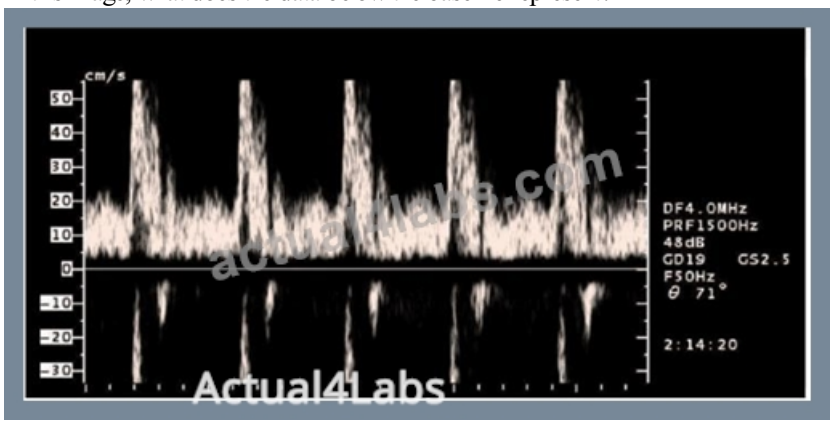
NEW QUESTION # 76
What is the relationship between overall gain and image brightness?

- A. There is no relationship between overall gain and image brightness
- B. The higher the overall gain, the brighter the image
- C. The higher the overall gain, the darker the image
- D. The lower the overall gain, the brighter the image

Answer: B

Explanation:
Overall gain in ultrasound refers to the amplification of all the received echo signals. Increasing the overall gain amplifies the signals, making the entire image brighter. Conversely, decreasing the overall gain reduces the signal amplification, resulting in a darker image. Overall gain adjustment affects the entire image uniformly, unlike time gain compensation (TGC), which adjusts the gain at different depths independently.
Reference:
ARDMS Sonography Principles and Instrumentation (SPI) Exam Study Guide
"Diagnostic Ultrasound: Principles and Instruments" by Frederick W. Kremkau

NEW QUESTION # 77
In this image, what does the data below the baseline represent?

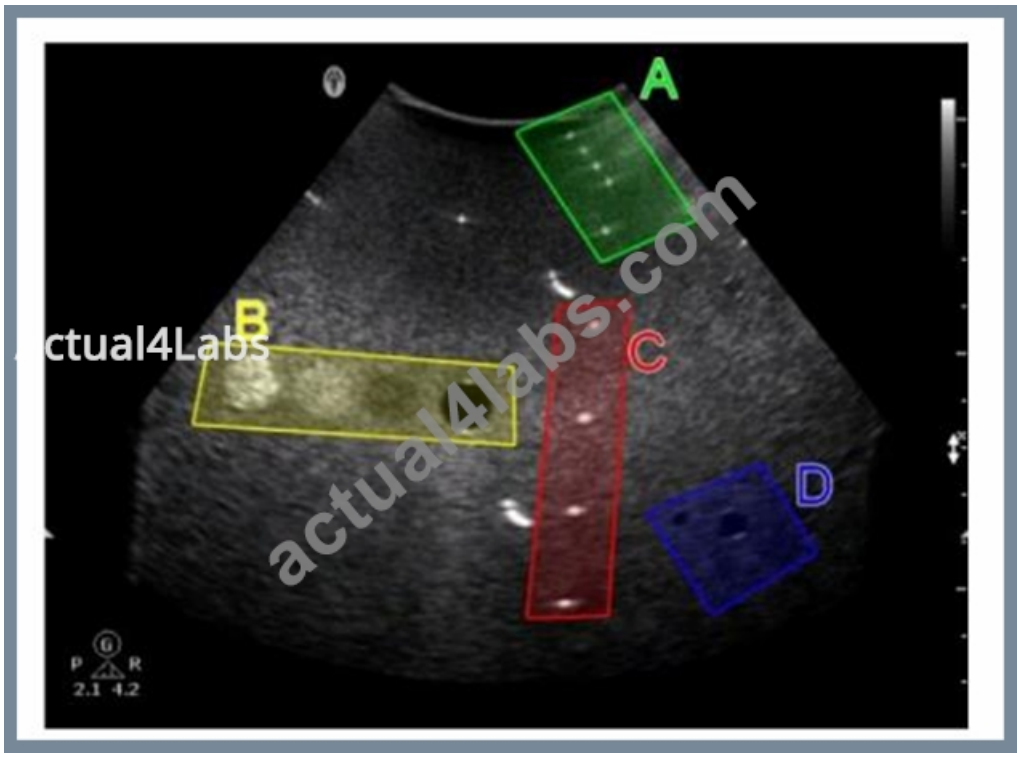


- A. Wall filter setting too high
- B. Blood flow directed towards the transducer
- C. Mirror image artifact
- D. Aliasing and retrograde blood flow

Answer: D

Explanation:
In the provided image, data below the baseline represents blood flow moving away from the transducer, which can indicate retrograde flow. When using spectral Doppler, the baseline separates flows towards and away from the transducer. Aliasing occurs when the velocity of blood flow exceeds the Nyquist limit, causing the display to wrap around and appear on the opposite side of the baseline. This phenomenon is common in high-velocity flow situations and results in part of the flow being displayed below the baseline. Retrograde flow further supports this, as it shows blood moving in the opposite direction to the expected flow.
References:
ARDMS Sonography Principles & Instrumentation Guidelines
Kremkau FW. Sonography Principles and Instruments. 9th ed. Philadelphia, PA: Elsevier; 2016.

NEW QUESTION # 78
Which target group in this image of a tissue-mimicking phantom is used for gray-scale evaluation?

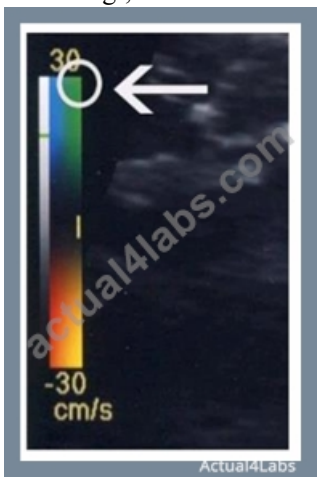


- A. Option A
- B. Option D
- C. Option B
- D. Option C

Answer: D

Explanation:
Gray-scale evaluation in a tissue-mimicking phantom involves assessing the uniformity and accuracy of the gray-scale representation of the tissues.
Option C typically contains structures designed to test the machine's ability to accurately depict varying levels of echogenicity, which is essential for proper gray-scale evaluation.
This area will have a range of echo intensities that help in determining the contrast resolution and the ability of the system to distinguish between different tissue types based on their gray-scale values. Reference:
ARDMS Sonography Principles and Instrumentation guidelines on tissue-mimicking phantoms and image quality evaluation.

NEW QUESTION # 79
In this image, which characteristics of flow are represented by the upper right side of a variance mode color map?



- A. Higher velocity, turbulent with a positive Doppler shift
- B. Higher velocity, turbulent with a negative Doppler shift

- C. Higher velocity, laminar with a positive Doppler shift
- D. Higher velocity, laminar with a negative Doppler shift

Answer: A

Explanation:
In a variance mode color map, the upper right side typically indicates higher velocity and turbulent flow with a positive Doppler shift. Variance mode maps are designed to display not only the mean velocity and direction of blood flow but also the presence of turbulence. The color green is often used in the upper right quadrant to represent areas of turbulence with positive Doppler shifts, which occur when the blood flow is moving towards the transducer at higher velocities and with increased chaotic motion.
Reference:
ARDMS Sonography Principles and Instrumentation guidelines
"Diagnostic Ultrasound: Physics and Equipment" by Peter Hoskins, Kevin Martin, Abigail Thrush

NEW QUESTION # 80
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