

MULTIPLE CHOICE

QUALITY ASSURANCE - PRACTICE SET

PROPOSED FOR REVIEW - questions are the author's verbatim Q&A; distractors are auto-selected from other answers in the same bank and must be checked by a subject-matter reviewer (a distractor could coincidentally be correct). Not authoritative assessment content.

1. What is the device of choice to evaluate Doppler systems?

- A. Tissue equivalent phantom
- B. Hydrophone
- C. AIUM test object
- D. Flow phantom

2. With an AIUM 100 mm test object, how is axial resolution evaluated?

- A. Using pins that are perpendicular to the sound beam's main axis
- B. Using pins that are parallel to the sound beam's main axis
- C. Using only the dead-zone targets
- D. Using color flow channels only

3. What form of sensitivity assesses the weakest echo signal?

- A. Normal sensitivity
- B. Minimum sensitivity
- C. Maximum sensitivity
- D. Contrast sensitivity

4. Does a tissue-equivalent phantom have attenuation properties?

- A. No
- B. Yes

5. What are the three forms of sensitivity?

- A. Near, focal, far
- B. Normal, minimum, maximum
- C. Axial, lateral, elevational
- D. Input, output, receiver

6. Does a lower- or higher-frequency transducer have a thinner dead zone?

- A. Lower-frequency transducer
- B. Wider-footprint transducer
- C. Higher-frequency transducer
- D. Lower-output transducer

7. What refers to the ability of a system to display low-level echoes?

- A. Registration accuracy
- B. Sensitivity
- C. Specificity
- D. Contrast resolution

8. What is the ability of the system to place echoes in a correct horizontal position?

- A. Vertical depth calibration
- B. Horizontal calibration
- C. Axial resolution
- D. Registration accuracy

9. What form of sensitivity is evaluated with output power and amplification set at the highest levels?

- A. Maximum sensitivity

- B. Contrast resolution
- C. Normal sensitivity
- D. Minimum sensitivity

10. What is slice thickness most likely to degrade?

- A. Output power
- B. Doppler shift
- C. Pulse repetition frequency
- D. Image quality

11. On an AIUM 100 mm test object, where is the dead zone located?

- A. At the bottom
- B. At the top
- C. Only at the focal zone
- D. Behind the deepest pin group

12. Does an AIUM 100 mm test object have attenuation properties?

- A. No
- B. Yes

13. What is another term for range accuracy?

- A. Vertical depth calibration
- B. Horizontal calibration
- C. Registration accuracy
- D. Lateral resolution

14. What is the periodic evaluation of an ultrasound system to guarantee quality imaging?

- A. Quality factor
- B. Quality assurance
- C. Acceptance angle
- D. Dynamic focusing

15. What will allow for more accurate imaging of structures within the dead zone?

- A. Lower receiver gain
- B. Higher output power
- C. Standoff or gel pack
- D. Wall filter

16. What measures the beam geometry perpendicular to the imaging plane?

- A. Axial resolution
- B. Slice thickness
- C. Lateral resolution
- D. Range accuracy

17. Is the dead zone in the region closest to or farthest from the transducer?

- A. Closest to the transducer
- B. Farthest from the transducer
- C. At the image center only
- D. At the focal zone

18. What describes the accuracy of a system when placing reflections at the correct depth parallel to the sound beam?

- A. Lateral resolution
- B. Dead zone
- C. Horizontal calibration
- D. Range accuracy

19. What type of phantom is used to evaluate dimensions, fill-in of cysts, and tissue texture?

- A. Tissue equivalent phantom
- B. Hydrophone
- C. Vibrating string phantom
- D. Flow phantom

20. What kind of resolution is the smallest distance at which two pins parallel to the sound beam can be distinguished?

- A. Contrast resolution
- B. Axial resolution
- C. Lateral resolution
- D. Elevational resolution

21. What are the three types of Doppler phantoms?

- A. Calorimeter, hydrophone, thermocouple
- B. Wire target, pin target, cyst phantom
- C. Vibrating string, flow phantom, moving belt
- D. Dead zone, axial, lateral

22. What test object is a fluid-filled tank that contains stainless steel pins or plastic strings?

- A. Tissue-equivalent phantom
- B. AIUM 100 mm test object
- C. Doppler flow phantom
- D. Hydrophone tank

23. With an AIUM 100 mm test object, how is lateral resolution evaluated?

- A. Using a flow channel with moving fluid
- B. Using pins that are perpendicular to the sound beam's main axis
- C. Using only the dead-zone targets
- D. Using pins that are parallel to the sound beam's main axis

24. What form of sensitivity uses settings that let you see all pins, solid masses, and cystic masses accurately displayed?

- A. Minimum sensitivity
- B. Maximum sensitivity
- C. Dead zone testing
- D. Normal sensitivity

25. What is the evaluation of slice thickness also called?

- A. Elevational resolution
- B. Axial resolution
- C. Lateral resolution
- D. Contrast resolution