

# MULTIPLE CHOICE

## PULSED ECHO - PRACTICE SET - ANSWER KEY

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. True or False? Higher pulser voltages are desired because they decrease transmitted acoustic energy and the patient exposure to ultrasound energy.

- A. True
- B. False**

2. Are strong signals displayed as bright white or black?

- A. Black
- B. Medium gray
- C. Not displayed
- D. Bright white**

3. True or false? Output power has no relation to bioeffects.

- A. False**
- B. True

4. What organizes and maintains the proper timing and interactions of the system components?

- A. Display
- B. Master synchronizer**
- C. Storage
- D. Receiver

5. What imaging depth is produced by a longer listening time?

- A. Deep**
- B. No image
- C. Unrelated to PRP
- D. Shallow

6. Is the pulser adjustable?

- A. No
- B. Yes**

7. In a TGC curve, at what depth are reflections maximally compensated?

- A. The delay
- B. The slope
- C. The knee**
- D. The near gain

8. In a TGC curve, what does the x-axis indicate?

- A. Elapsed scan time
- B. The amount of compensation**
- C. Reflector depth
- D. Output power

9. In a TGC curve, what does the far gain represent?

- A. The depth where compensation begins
- B. The maximum compensation a receiver can provide**
- C. The region where compensation increases with depth
- D. The amount of output power transmitted

10. What effect does rejection have on an ultrasound image?

- A. Affects low-level signals**
- B. Increases patient exposure
- C. Brightens only the far field
- D. Changes all echoes equally

11. If two identical structures are located at different depths, which structure is displayed more brightly without compensation?

- A. The structure closest to the focal zone
- B. The deeper structure
- C. Both structures equally
- D. The more superficial structure**

12. What term describes the time between one voltage spike and the next?

- A. Pulse repetition frequency (PRF)
- B. Pulse repetition period (PRP)**
- C. Pulse duration
- D. Spatial pulse length

13. What happens to the entire image when pulser voltage is low?

- A. It appears dark because of weak reflected echoes**
- B. Only the far field becomes sharper
- C. It appears bright because of strong reflected echoes
- D. Only the near field becomes brighter

14. What region of a TGC curve corrects for increasing attenuation due to increasing depth?

- A. Delay
- B. Slope**
- C. Near gain
- D. Knee

15. What determines amplitude, pulse repetition frequency, and pulse repetition period?

- A. The display
- B. The receiver
- C. The pulser**
- D. The storage device

16. What process does the receiver use to correct for attenuation?

- A. Amplification
- B. Compensation**
- C. Compression
- D. Demodulation

17. Are echoes that arise at a greater depth stronger or weaker?

- A. Weaker**
- B. Stronger
- C. Completely eliminated
- D. Unchanged

18. What places a smooth line around the bumps and evens them out?

- A. Reject
- B. Compensation
- C. Rectification
- D. Enveloping (smoothing)**

19. During transmission, what transforms electrical energy into acoustic energy?

- A. The transducer**
- B. The scan converter
- C. The display
- D. The receiver

20. Does increasing amplification change the signal-to-noise ratio?

- A. No
- B. Yes

21. How can you adjust the pulse repetition period?

- A. Changing only display brightness
- B. Changing the depth of view**
- C. Changing only dynamic range
- D. Changing only storage format

22. When the pulse repetition period is short, the pulse repetition frequency is \_\_\_\_\_ and the listening time is \_\_\_\_\_.

- A. High and longer
- B. Low and longer
- C. High and shorter**
- D. Low and shorter

23. What is the two-part process of demodulation?

- A. Amplification and compensation
- B. Rectification and enveloping (smoothing)**
- C. Compression and reject
- D. Brightness and contrast

24. What happens to the entire image when pulser voltage is high?

- A. Only the far field becomes narrower
- B. It appears bright because of strong reflected echoes**
- C. Only the near field becomes darker
- D. It appears dark because of weak reflected echoes

25. During what process is the received signal made larger?

- A. Compensation
- B. Compression
- C. Demodulation
- D. Amplification**