

MULTIPLE CHOICE

DOPPLER - 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. How is Doppler shift related to the frequency of the transmitted sound?

- A. Inversely related
- B. Related only to pulse length
- C. Directly related**
- D. Unrelated

2. True or False? The variance mode map displays colors only from top to bottom.

- A. True
- B. False**

3. What are the units for resistive index?

- A. Hertz
- B. Decibels
- C. Centimeters per second
- D. No units; it is a ratio**

4. What type of flow has a spectral trace seen with spectral broadening?

- A. Laminar flow
- B. Turbulent flow**
- C. No flow
- D. Pure crosstalk

5. Is the Doppler shift positive or negative when red blood cells move toward the transducer?

- A. Positive**
- B. Zero
- C. Aliased only
- D. Negative

6. Does a continuous wave transducer detect low- or high-amplitude reflections?

- A. No amplitude reflections
- B. Low-amplitude reflections**
- C. Only saturated reflections
- D. High-amplitude reflections only

7. The faster the velocity, the _____ the Doppler frequency.

- A. Greater**
- B. Unchanged
- C. More random
- D. Smaller

8. What does color Doppler report?

- A. Only resistive index
- B. Only spectral window size
- C. Peak velocities
- D. Average velocities**

9. How is Doppler shift related to the frequency of the transducer?

- A. Directly related**

- B. Equal to the Nyquist limit
- C. Unrelated
- D. Inversely related

10. True or False? Aliasing never appears with pulsed Doppler.

- A. True
- B. False**

11. Does power mode detect color Doppler direction?

- A. No**
- B. Yes

12. Which transducer frequency creates higher Doppler shifts?

- A. Lower frequency transducer
- B. Higher frequency transducer**
- C. Lower pulse repetition frequency
- D. Higher wall filter setting

13. How many crystals are required in a continuous wave Doppler transducer?

- A. Two: one continuously transmits and the other continuously receives**
- B. Four: two transmit and two store echoes
- C. One: it alternates between transmit and receive
- D. Three: one transmits, one receives, and one focuses

14. What is velocity defined by?

- A. Magnitude only
- B. Magnitude and direction**
- C. Direction only
- D. Frequency and bandwidth

15. What is another term for average velocities?

- A. Baseline velocities
- B. Peak velocities
- C. Mean velocities**
- D. Aliased velocities

16. What is used to measure red blood cell velocities?

- A. The range equation
- B. The Doppler principle**
- C. Snell's law
- D. The piezoelectric effect

17. Which transducer frequency creates lower Doppler shifts?

- A. Lower frequency transducer**
- B. Higher frequency transducer
- C. Lower wall filter setting
- D. Higher pulse repetition frequency

18. What happens to the Nyquist limit when PRF increases?

- A. It becomes zero
- B. It becomes unrelated to sampling
- C. It decreases
- D. It increases**

19. What are multiple ultrasound pulses called?

- A. Packet or ensemble**
- B. Gain or compression
- C. Wall filter or scale
- D. Pulse length or period

20. What term describes a change in frequency caused by motion between the sound source and receiver?

- A. Nyquist limit

B. Doppler shift

- C. Pulse repetition frequency
- D. Operating frequency

21. What is the region between the baseline and the spectrum called?

- A. Color map
- B. Nyquist limit
- C. Spectral window**
- D. Wall filter

22. What effect does a transducer have when it does not contain backing material?

- A. Wide bandwidth, low Q-factor, lower sensitivity, and a damped transmitted signal
- B. Narrow bandwidth, high Q-factor, higher sensitivity, and an undamped transmitted signal**
- C. Short pulse duration, broad bandwidth, and improved axial resolution
- D. Lower sensitivity, heavy damping, and a wide frequency range

23. True or False? Doppler shifts created by deeper red blood cells can be inaccurately measured.

- A. False
- B. True**

24. What does color Doppler measure?

- A. Spectral window
- B. Resistive index
- C. Mean velocity**
- D. Peak velocity

25. What does Doppler shift depend upon?

- A. Blood cell velocity**
- B. Output power
- C. Display persistence
- D. Pixel density