

MULTIPLE CHOICE

PULSED WAVES - 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 term describes the distance from the start of a pulse to the end of that same pulse?

- A. Pulse duration
- B. Wavelength
- C. Pulse repetition period
- D. Spatial pulse length

2. What term describes the percentage or fraction of time that an ultrasound system is transmitting a pulse?

- A. Pulse duration
- B. Duty factor
- C. Pulse repetition period
- D. Pulse repetition frequency

3. What are the units of pulse duration?

- A. Distance units
- B. Time units
- C. Frequency units
- D. Intensity units

4. What term describes the time from the start of one pulse to the start of the next pulse?

- A. Pulse repetition period
- B. Spatial pulse length
- C. Pulse repetition frequency
- D. Pulse duration

5. Which pulse characteristics create a short pulse duration?

- A. Few cycles or cycles with a long wavelength
- B. Few cycles or cycles with a short period
- C. Many cycles or cycles with a low frequency
- D. Many cycles or cycles with a long period

6. True or False? Pulse repetition frequency is related only to depth of view among routine imaging controls.

- A. False
- B. True

7. What units are used for pulse repetition frequency?

- A. Millimeters (mm)
- B. Per second or Hertz (Hz)
- C. Milliseconds (ms)
- D. Decibels (dB)

8. What happens to pulse repetition frequency when the system images at a shallow depth?

- A. PRF is lower
- B. PRF is higher
- C. PRF is unchanged
- D. PRF becomes equal to pulse duration

9. What happens to duty factor when imaging superficial structures?

- A. Duty factor increases

- B. Duty factor becomes zero
- C. Duty factor stays the same
- D. Duty factor decreases

10. Can the sonographer directly change pulse duration?

- A. Yes
- B. No

11. What units are commonly used to measure pulse duration?

- A. Microseconds (us)
- B. Millimeters (mm)
- C. Decibels (dB)
- D. Hertz (Hz)

12. Pulse duration is directly proportional to which two pulse characteristics?

- A. Number of cycles in the pulse and period
- B. Wavelength and propagation speed
- C. Imaging depth and pulse repetition period
- D. Frequency and pulse repetition frequency

13. How is pulse repetition frequency related to the frequency of the transmitted sound wave?

- A. They are unrelated
- B. They are directly proportional
- C. They are inversely proportional
- D. They are equal

14. True or False? A pulse is made of individual cycles but travels as a single unit.

- A. False
- B. True

15. When does the ultrasound transducer receive signals from reflectors in the body?

- A. During dead time only
- B. During pulse duration only
- C. During receive time, or listening time
- D. During continuous transmission only

16. True or False? Listening time is shorter with shallower imaging.

- A. True
- B. False

17. How is duty factor related to imaging depth?

- A. Inversely related
- B. Unrelated
- C. Equal
- D. Directly related

18. Which five parameters describe pulsed sound?

- A. Reflection, refraction, scattering, absorption, and attenuation
- B. Gain, depth, focus, compression, and reject
- C. Period, frequency, speed, wavelength, and amplitude
- D. Duty factor, pulse duration, pulse repetition period, pulse repetition frequency, and spatial pulse length

19. While imaging superficial structures, what happens to duty factor?

- A. Duty factor is higher
- B. Duty factor becomes 100%
- C. Duty factor is unchanged
- D. Duty factor is lower

20. What units are used for pulse repetition period?

- A. Unitless percentage
- B. Units of time, such as milliseconds
- C. Units per second, such as Hertz

D. Units of distance, such as millimeters

21. Which two characteristics create a long spatial pulse length?

- A. Many cycles in the pulse and short periods
- B. Few cycles in the pulse and short wavelengths
- C. Many cycles in the pulse and long wavelengths
- D. Few cycles in the pulse and high frequencies

22. Pulse duration is inversely proportional to which pulse characteristic?

- A. Period
- B. Frequency
- C. Number of cycles
- D. Pulse duration

23. When an ultrasound system images a deeper depth, what happens to the time from one pulse to the next?

- A. It becomes independent of listening time
- B. It becomes longer
- C. It becomes equal to one wave period
- D. It becomes shorter

24. What term describes the time required to create one pulse?

- A. Pulse repetition period
- B. Spatial pulse length
- C. Pulse repetition frequency
- D. Pulse duration

25. True or False? A pulse must have a beginning and an end.

- A. True
- B. False