Review of Chapter 25

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

____ 1. The time needed for a wave to make one complete cycle is its
a. frequency.
b. velocity.
c. amplitude.
d. period.
e. wavelength.

____ 2. The distance between successive identical parts of a wave is called its
a. frequency.
b. period.
c. velocity.
d. amplitude.
e. wavelength.

____ 3. The Hertz is a
a. special radio wave.
b. type of car.
c. unit of period.
d. unit of wavelength.
e. unit of frequency.

____ 4. Sound is an example of a
a. longitudinal wave.
b. constructive wave.
c. Doppler wave.
d. transverse wave.
e. standing wave.

____ 5. A longitudinal wave lacks which of the following properties?
a. speed.
b. frequency.
c. wavelength.
d. amplitude.
e. A longitudinal wave has all of the above.

____ 6. When two or more waves are at the same place at the same time, the resulting effect is called
a. a standing wave.
b. a Doppler wave.
c. a shock wave.
d. interference.
e. a period.

____ 7. Suppose a bug is jiggling up and down and swimming towards you at the same time. Compared to the frequency at which the bug is emitting waves, the frequency of the waves reaching you is
a. lower.
b. higher.
c. just the same.

____ 8. As the sound of a car's horn passes and recedes from you, the pitch of the horn seems to
a. increase.
b. stay the same.

c. decrease.

____ 9. When a sound source moves towards you, what happens to the wave speed?
a. It decreases.
b. It increases.
c. It stays the same.

____ 10. Some of a wave's energy is always being dissipated as heat. In time, this will reduce the wave's
a. frequency.
b. wavelength.
c. speed.
d. period.
e. amplitude.

____ 11. The amplitude of a particular wave is 4.0 m. The top-to-bottom distance of the disturbance is
a. 2.0 m.
b. 4.0 m.
c. 8.0 m.
d. none of the above

____ 12. If you double the frequency of a vibrating object, its period
a. halves.
b. is quartered.
c. doubles.

____ 13. You dip your finger repeatedly into water and make waves. If you dip your finger more frequently, the wavelength of the waves
a. lengthens.
b. stays the same.
c. shortens.

____ 14. During a single period, the distance traveled by a wave is
a. two wavelengths.
b. one wavelength.
c. one half wavelength.

____ 15. An aircraft that flies faster than the speed of sound is said to be
a. subsonic.
b. supersonic.
c. neither of the above

____ 16. The Doppler effect occurs when a source of sound moves
a. away from you.
b. toward you.
c. both A and B
d. none of the above

____ 17. A sound wave that has a higher frequency has a wavelength that is
a. shorter.
b. longer.

____ 18. Two waves arrive at the same place at the same time exactly in step with each other. Each wave has an amplitude of 2.5 m. The resulting wave has an amplitude of
a. 0.6 m.
b. 1.3 m.
c. 2.5 m.
d. 5.0 m.
e. 10.0 m.

____ 19. The period of an ocean wave is 10 seconds. What is the wave’s frequency?

a. 0.10 Hz
b. 5.0 Hz
c. 10.0 Hz
d. 20.0 Hz
e. 30.0 Hz

____ 20. A weight on the end of a spring bobs up and down one complete cycle every 4.0 seconds. Its frequency is
a. 0.25 hertz.
b. 4.0 hertz.
c. none of the above.

____ 21. A cork floating in a pool oscillates up and down three complete cycles in 1 second as a wave passes by. The wave's wavelength is 2 meters. What is the wave's speed?
a. 1 m/s
b. 2 m/s
c. 6 m/s
d. 12 m/s
e. More than 12 m/s

____ 22. Radio waves travel at the speed of light, 300,000 km/s. The wavelength of a radio wave received at 200 megahertz is
a. 0.7 m.
b. 1.5 m.
c. 6.7 m.
d. 15 m.

____ 23. A skipper on a boat notices wave crests passing the anchor chain every 6.0 seconds. The skipper estimates the distance between crests at 30.0 m. What is the speed of the water waves?
a. 5.0 m/s
b. 6.0 m/s
c. 30.0 m/s
d. not enough information given

Review of Chapter 25
Answer Section

MULTIPLE CHOICE

1. ANS: D DIF: 1 REF: p. 372 OBJ: 25.1
   STO: 4.4.1.iv
2. ANS: E DIF: 1 REF: p. 374 OBJ: 25.2
   STO: 4.4.3.i, PI.4.4.3c
3. ANS: E DIF: 1 REF: p. 374 OBJ: 25.2
   STO: 4.4.3.i, PI.4.4.3c
4. ANS: A DIF: 1 REF: p. 379 OBJ: 25.6
   STO: 4.4.3.iv
5. ANS: E DIF: 2 REF: p. 378, p. 379
   OBJ: 25.6 STO: 4.4.3.iv
6. ANS: D DIF: 2 REF: p. 379 OBJ: 25.7
   STO: 4.4.3.vi
7. ANS: B DIF: 2 REF: p. 382 OBJ: 25.9
   STO: PI.4.4.3n
8. ANS: C DIF: 2 REF: p. 383 OBJ: 25.9
   STO: PI.4.4.3n
9. ANS: C DIF: 3 REF: p. 383 OBJ: 25.9
   STO: PI.4.4.3n
10. ANS: E DIF: 3 REF: p. 375, p. 376
    OBJ: 25.3 STO: PI.4.4.3b, PI.4.4.3n
11. ANS: C DIF: 2 REF: p. 374 OBJ: 25.2
    STO: 4.4.3.i, PI.4.4.3c
12. ANS: A DIF: 3 REF: p. 375 OBJ: 25.2
    STO: 4.4.3.i, PI.4.4.3c
13. ANS: C DIF: 2 REF: p. 376 OBJ: 25.3
    STO: PI.4.4.3b, PI.4.4.3n
14. ANS: B DIF: 3 REF: p. 374 OBJ: 25.2
    STO: 4.4.3.i, PI.4.4.3c
15. ANS: B DIF: 1 REF: p. 384 OBJ: 25.1
    STO: 4.4.1.iv
16. ANS: C DIF: 2 REF: p. 382, p. 383
    OBJ: 25.9 STO: PI.4.4.3n
17. ANS: A DIF: 2 REF: p. 376 OBJ: 25.4
    STO: PI.4.4.3j, PI.4.4.3k
18. ANS: D DIF: 2 REF: p. 379 OBJ: 25.7
    STO: 4.4.3.vi
19. ANS: A DIF: 2 REF: p. 375 OBJ: 25.2
    STO: 4.4.3.i, PI.4.4.3c
20. ANS: A DIF: 2 REF: p. 374 OBJ: 25.2
    STO: 4.4.3.i, PI.4.4.3c
21. ANS: C DIF: 3 REF: p. 377 OBJ: 25.4
    STO: PI.4.4.3j, PI.4.4.3k
22. ANS: B DIF: 3 REF: p. 377 OBJ: 25.4

STO: PI.4.4.3j, PI.4.4.3k

23. ANS: A DIF: 2 REF: p. 377 OBJ: 25.4
STO: PI.4.4.3j, PI.4.4.3k