

Test 2 review

Student: _____

1. Molecules in a solid

- A. are harder than molecules in liquids or gases.
- B. transfer heat to their neighbors by a process called convection.
- C. have no internal energy because they are not moving around.
- D. are held in nearly fixed positions by strong attractive forces.

2. The process by which solids vaporize without first becoming a liquid is called

- A. sublimation.
- B. condensation.
- C. evaporation.
- D. boiling.

3. When water vapor condenses to a liquid

- A. it absorbs energy from the surroundings.
- B. its temperature drops sharply.
- C. it transfers heat to the surroundings.
- D. its temperature rises slightly.

4. In the equation: $Q = mc\Delta t$, the c stands for the

- A. heat of vaporization.
- B. number of calories gained or lost.
- C. convection coefficient.
- D. specific heat.

5. The heat needed to warm one gram of water one Celsius degree is called a

- A. joule.
- B. calorie.
- C. Btu.
- D. kilocalorie.

6. The transfer of heat that occurs when energy moves from molecule to molecule is called

- A. convection.
- B. conduction.
- C. radiation.
- D. phase change.

7. Adding heat to a substance

- A. always results in a temperature increase.
- B. sometimes does not result in a temperature change.
- C. sometimes results in a temperature decrease.
- D. None of the above.

8. Which thermodynamic law says that you cannot convert 100 percent of a heat source into mechanical energy?

- A. first law of thermodynamics
- B. second law of thermodynamics
- C. third law of thermodynamics
- D. law of increasing entropy

9. Sound waves in air

- A. are longitudinal waves.
- B. are produced by something vibrating.
- C. undergo refraction when they pass through warm and cold air.
- D. All of the above.

10. The time that is required for a vibrating object to complete one full cycle is called

- A. frequency.
- B. wavelength.
- C. amplitude.
- D. period.

11. If $v = \lambda f$, then how are λ and f related?

- A. λ is directly proportional to f
- B. λ is inversely proportional to f
- C. λ is a factor of f
- D. λ and f are unrelated

12. In longitudinal waves, the medium

- A. vibrates in a direction perpendicular to the direction of motion of the wave.
- B. vibrates in the same direction the wave is moving.
- C. moves in sort of a circular motion.
- D. doesn't vibrate; the disturbance just moves through the medium.

13. The characteristic of a sound wave that you interpret as loudness is related to

- A. frequency.
- B. wavelength.
- C. amplitude.
- D. velocity.

14. The bending of a wave at the boundary between two media is called

- A. reflection.
- B. resonance.
- C. reverberation.
- D. refraction.

15. The lowest frequency possible in a vibrating string undergoing resonance

- A. is the fundamental frequency.
- B. determines the pitch of the musical note sounded.
- C. has one antinode.
- D. All of the above.

16. When the trough of one wave arrives at the same time and place as the crest of an otherwise identical wave,

- A. constructive interference occurs.
- B. destructive interference occurs.
- C. resonance occurs.
- D. they don't interact with each other.

17. What is the range of normal human hearing?

- A. 200 to 120,000 Hz
- B. 20 to 2,000 Hz
- C. 50 to 10,000 Hz
- D. 20 to 20,000 Hz

18. Condensation in a longitudinal wave corresponds to what part of a transverse wave?

- A. crest
- B. trough
- C. wavelength
- D. amplitude

19. You are able to hear sounds from farther away on a cool night because sound waves are refracted toward

- A. cooler air near the ground.
- B. warmer air above the ground.
- C. cooler air above the ground.
- D. warmer air near the ground.

20. The temperature of 100 g of water is to be raised from 10°C to 60°C. The energy needed to do this is about

- A. 1×10^3 cal.
- B. 5×10^3 cal.
- C. 6×10^3 cal.
- D. 8×10^3 cal.
- E. 5.4×10^4 cal.

21. If the speed of sound is 1100 feet per second and a tuning fork oscillates at 440 cycles per second, what is the wavelength λ of the sound produced?

- A. 11 feet.
 - B. 4.4 feet.
 - C. 0.4 foot.
 - D. 2.5 feet.
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