

# PracTest - Waves

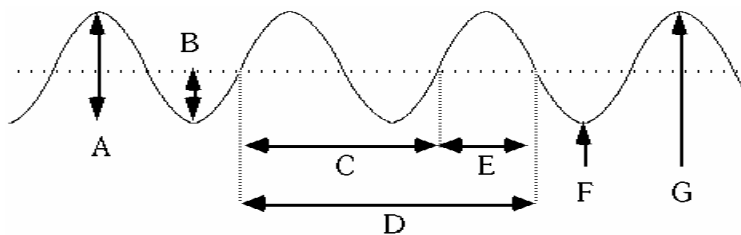
## Multiple Choice

Identify the choice that best completes the statement or answers the question.

- Which of the senses listed below are activated by waves?
 

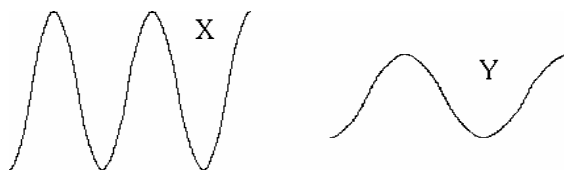
I. sight	II. taste	III. smell	
A. I only	C. III only	E. I and III only	G. I, II, and III
B. II only	D. I and II only	F. II and III only	H. None
- Waves made in a string are
  - longitudinal
  - transverse
  - a mixture of longitudinal and transverse

Consider the wave depicted to the right. In the diagram, A and B are vertical distances, C, D, and E are horizontal distances, F and G are points. Use the letters from the diagram to indicate the items specified in the following questions.



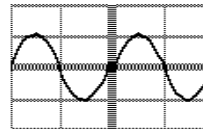
- The wavelength of the wave
 

A. A	C. C	E. E	G. G
B. B	D. D	F. F	
- What is the difference between waves X and Y shown to the right?

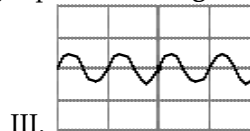
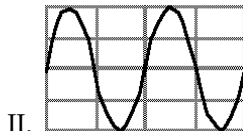
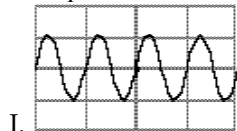


- |  |            |
|--|------------|
| A. X carries more energy                   | E. A and C |
| B. X carries less energy                   | F. B and D |
| C. X was made by a higher frequency source | G. A and D |
| D. X was made by a lower frequency source  | H. B and C |

Consider a sound whose wave form is shown by the oscilloscope trace to the right. This will be referred to as the ORIGINAL SOUND in the question or questions below.

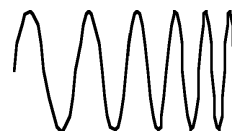
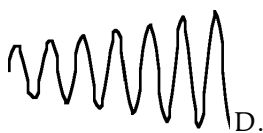


5. Compared to the ORIGINAL SOUND, which of the following represents a **higher-pitched** sound?



- A. I only                      C. III only                      E. I and III only                      G. I, II, and III  
 B. II only                      D. I and II only                      F. II and III only                      H. None of these

6. Which pattern below corresponds to a sound that maintains constant loudness while undergoing a decrease in pitch?



7. A source of sound oscillates  $6237/13$  times each second. How long does it take for the source to oscillate once?

- A.  $6237$  s                      B.  $13$  s                      C.  $6237/13$  s                      D.  $13/6237$  s

8. If the frequency of a wave source is doubled,

- A. the speed of the wave doubles                      E. A and/or C  
 B. the speed of the wave halves                      F. A and/or D  
 C. the wavelength of the wave doubles                      G. B and/or C  
 D. the wavelength of the wave halves                      H. B and/or D

9. Two objects, A and B, are made of materials that have equal densities, yet sound travels at a higher speed when passing through A. We can reasonably conclude that object A is

- A. made of material stronger than that of B                      E. A and C  
 B. made of material weaker than that of B                      F. B and C  
 C. longer than B                      G. A and D  
 D. shorter than B                      H. B and D

10. Two objects, A and B, are made of materials that have equal densities, yet sound travels at a higher speed when passing through A. We can reasonably conclude that object A is

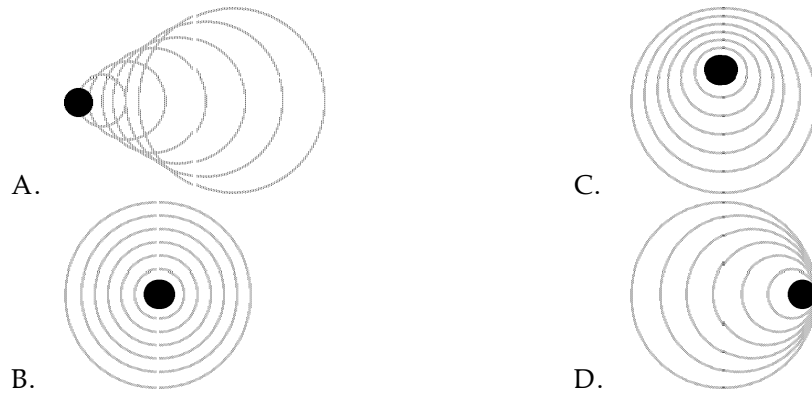
- A. made of material stronger than that of B                      E. A and C  
 B. made of material weaker than that of B                      F. B and C  
 C. longer than B                      G. A and D  
 D. shorter than B                      H. B and D

Source A is emitting sound at 300 Hz, Source B is emitting sound at 600 Hz. Both are generating sound waves in air.

11. If both sources are stationary, which waves travel faster?  
A. waves from A                      B. waves from B                      C. speed is same for both
12. If both A and B have wave barriers in front of them,  
A. A is traveling faster than B  
B. B is traveling faster than A  
C. Both have the same speed

Consider "normal" to indicate the characteristics associated with sound traveling from a stationary source with a fixed frequency to a stationary observer. For the situation(s) below, indicate any deviation from that standard.

13. If the source were moving toward the stationary observer, the wave speed would be  
A. higher                      B. lower                      C. unchanged
14. If the source were moving away from the stationary observer, the frequency with which the waves are observed would be  
A. higher                      B. lower                      C. unchanged
15. Which of the diagrams below best depicts a wave source moving through a medium at a speed equal to the speed of the waves?



## PracTest - Waves

### Answer Section

#### MULTIPLE CHOICE

- |            |                               |                             |
|------------|-------------------------------|-----------------------------|
| 1. ANS: A  | TOP: Wave Basics              | NOT: PracTest               |
| 2. ANS: B  | TOP: Wave Basics              | NOT: PracTest               |
| 3. ANS: C  | TOP: Wave Anatomy             | NOT: PracTest Final         |
| 4. ANS: E  | TOP: Wave Anatomy             | NOT: PracTest               |
| 5. ANS: E  | TOP: Amplitude and Wavelength | NOT: PracTest Final Beatles |
| 6. ANS: B  | TOP: Wave Anatomy             | NOT: PracTest               |
| 7. ANS: D  | TOP: Wave Ratios              | NOT: PracTest               |
| 8. ANS: D  | TOP: Wave Characteristics     | NOT: PracTest               |
| 9. ANS: A  | TOP: Wave Characteristics     | NOT: PracTest               |
| 10. ANS: A | TOP: Wave Characteristics     | NOT: PracTest               |
| 11. ANS: C | TOP: Wave Characteristics     | NOT: PracTest               |
| 12. ANS: C | TOP: Wave Characteristics     | NOT: PracTest               |
| 13. ANS: C | TOP: Doppler Effect           | NOT: PracTest               |
| 14. ANS: B | TOP: Doppler Effect           | NOT: PracTest               |
| 15. ANS: D | TOP: Doppler Effect           | NOT: PracTest               |