

Chapter 18 Waves-II

18-1 sound Waves

18-01

Question 94

When a sound wave travels from air into steel,

- (a) it changes from a longitudinal wave into transverse wave.
- (b) it's velocity decreases.
- (c) it's frequency increases.
- (d) it's wavelength increases.
- (e) it becomes more intense.

18-01

Question 95

A man strikes a long steel rod at one end. Another man, at the other end with his ear close to the rod, hears the sound of the blow twice (one through air and once through the rod), with a 0.1 seconds interval between. How long is the rod? [For the steel, the bulk modulus = 2.1×10^{11} Pa, and the density = 7.0×10^3 kg/m³. Speed of sound in air = 340 m/s.]

- (a) 42 m.
- (b) 34 m.
- (c) 36 m.
- (d) 40 m.
- (e) 44 m.

18-01

Question 96

0.42-41%

Sound waves

- (a) are matter waves.
- (b) travel at the same speed in all media.
- (c) are mechanical waves.
- (d) are transverse waves.
- (e) are electromagnetic waves.

18-01

Question 97

0.46-39%

Sound waves are not:

- (a) pressure waves.
- (b) mechanical waves.
- (c) compression waves.
- (d) transverse waves.
- (e) longitudinal waves.

18-01

Question 98

0.23-12%

In figure 3, the two observers at A and B are hearing the sound emitted by the point source S. What is the time difference between hearing the sound at the two locations? Use 345 m/s as the speed of sound.



Figure 3

- (a) 3.17 s
- (b) 0.053 s
- (c) 0.315 s
- (d) 0.368 s
- (e) 1.89 s