

Questions to explore understanding of radiations and radiating

Question 1

Which one of the following is correct? A. Light is a longitudinal wave that can travel through air. B. Light is a transverse wave that can travel through a vacuum. C. Sound is a longitudinal wave that can travel through a vacuum. D. Sound is a transverse wave that can travel through air.

Question 2

A laser pulse is sent out from Earth and after 4.5×10^{-2} second, it is reflected back from a satellite in space. What is the distance between the earth and the satellite? A. 4.5×10^6 m. B. 6.75×10^6 m. C. 9.0×10^6 m. D. 13.5×10^6 m.

Question 3

Which one of the following electromagnetic radiations can be used for cooking? A. Radio waves. B. Infra red radiation. C. X-rays. D. Gamma rays.

Two more questions

Question 4

Two opera singers are practising. They are singing at the same loudness, but singer X sings a higher pitch note, and singer Y sings a lower pitch note. Which one of the following is true? A. The two amplitudes are the same, but the frequencies are different. B. The two frequencies are the same, but the amplitudes are different. C. The two frequencies are the same, and the amplitudes are also the same. D. The two frequencies are different, and the amplitudes are also different.

Question 5

A dust particle hovers in front of a silent loudspeaker. The loudspeaker is turned on and emits a loud musical note of constant frequency. How will the dust particle move? A. It will stay in the same position. B. It will move away from the speaker. C. It will move up and down at about the same position. D. It will move back and forth at about the same position.

The last two questions

Question 6

The frequency of the sound from the loudspeaker is increased but the loudness stays the same. What happens to the motion of the dust particle in front of the speaker? A. It stays at the same position. B. It moves back and forwards over a bigger distance. C. It moves back and forwards faster. D. It moves up and down over a bigger distance. E. It moves up and down faster. F. It moves away over a bigger distance. G. It moves away faster.

Question 7

The loudness of the sound is increased but the frequency stays the same. What happens to the motion of the dust particle? A. It stays at the same position. B. It moves back and forwards over a bigger distance. C. It moves back and forwards faster. D. It moves up and down over a bigger distance. E. It moves up and down faster. F. It moves away over a bigger distance. G. It moves away faster.