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JEE / NEET / Olympiads / NTSE / Boards

Date: 21-01-2022

Class: 8th Genesis

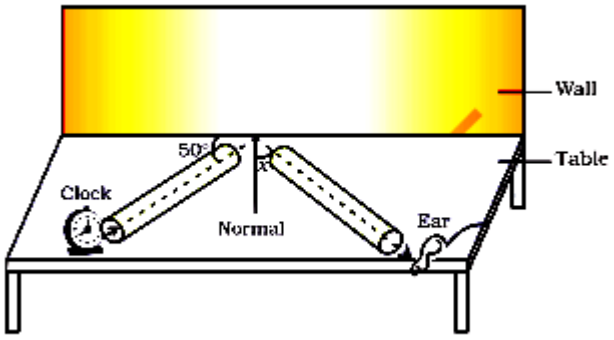
Subject: Science

Test code: SEP17(21011319)

Physics

M. Marks: 20

1. Why are sound waves called mechanical waves? (1 marks)
2. Suppose you and your friend are on the moon. Will you be able to hear any sound produced by your friend? (1 marks)
3. Which wave property determines (a) Loudness, (b) pitch? (1 marks)
4. Guess which sound has a higher pitch; guitar or car horn? (1 marks)
5. How are the wavelength and frequency of a sound wave related to its speed? (1 marks)
6. Explain how sound is produced by your school bell. (1 marks)
7. What are wavelength, frequency, time period and amplitude of a sound wave? (2 marks)
8. Sound produced by a thunderstorm is heard 10 s after the lightning is seen. Calculate the approximate distance of the thunder cloud. (Given speed of sound = 340 m s^{-1}). (2 marks)
9. For hearing the loudest ticking sound heard by the ear, find the angle x in the fig. (2 marks)



10. Why is the ceiling and wall behind the stage of good conference halls or concert halls made curved? (2 marks)
11. Establish the relationship between speed of sound, its wavelength and frequency. If velocity of sound in air is 340 m s^{-1}, calculate (3 marks)
    (i) Wavelength when frequency is 256 Hz.
    (ii) Frequency when wavelength is 0.85 m.
12. Draw a curve showing density or pressure variations with respect to distance for a disturbance produced by sound. Mark the position of compression and rarefaction on this curve. Also define wavelengths and time period using this curve. (3 marks)