



BIOLOGY

NCERT - NCERT Biology(Tamil)

ACOUSTICS

Example Problem

1. At what temperature will the velocity of sound in air be double the velocity of sound in air at $0^{\circ} C$?



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Solved Problems

1. A source producing a sound of frequency 90 Hz is approaching a stationary listener with a speed equal to $(1/10)$ of the speed of sound. What will be the frequency heard by the listener?



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2. A source producing a sound of frequency 500 Hz is moving towards a listener with a velocity of 30 m s^{-1} . The speed of the sound is 330 m s^{-1} . What will be the frequency heard by listener?



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3. A source of sound is moving with a velocity of 50 m s^{-1} towards a stationary listener. The listener measures the frequency of the source as 1000 Hz. what will be the apparent

frequency of the source when it is moving away from the listener after crossing him? (velocity of sound in the medium is 330 m s^{-1})



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4. A source and listener are both moving towards each other with a speed $v/10$ where v is the speed of sound. If the frequency of the note emitted by the source is f , what will be the frequency heard by the listener?



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5. At what speed should a source of sound move away from a stationary observer so that observer finds the apparent frequency equal to half of the original frequency?



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