

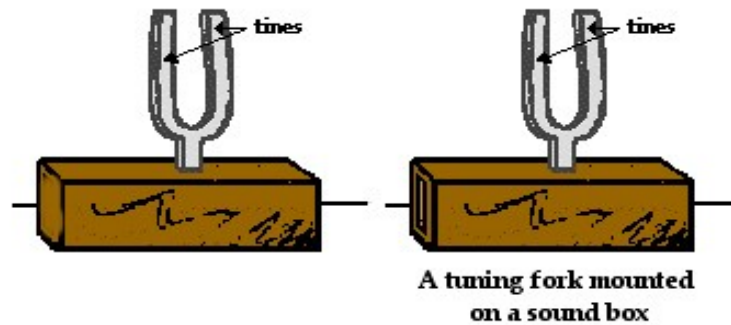
State Examination Commission – Physics Higher Level, 2010

Question 12c

- Explain the term resonance and describe a laboratory experiment to demonstrate it. (15)
Give two characteristics of a musical note and name the physical property on which each characteristic depends. (9)
Explain why a musical tune does not sound the same when played on different instruments. (4)
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Explain the term resonance and describe a laboratory experiment to demonstrate it. (15)

Resonance is the response of a body to vibrations of its own natural frequency.



Take two identical tuning forks mounted on sound boxes. If one of the mounted tuning forks is set vibrating, placed on the bench close to the second tuning fork for several seconds, and then has its vibrations damped by squeezing the tines between your fingers, it will be heard that the second tuning fork had started vibrating in response to it. This is resonance

- Give two characteristics of a musical note and name the physical property on which each characteristic depends. (9)

loudness depends on amplitude of the sound wave
pitch depends on frequency of the sound wave.

- Explain why a musical tune does not sound the same when played on different instruments. (4)

The presence and extent of overtones differs from instrument to instrument.