



JAFFNA HINDU COLLEGE

Risk Holiday Self - Education Worksheet – 2020

Grade – 12 (2021) | Physics (2)

Name/Index No :

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Resonance tube

The Experimental arrangement is shown here is used to find the speed of sound in air and the end correction.

a. How do obtain the first resonance position?

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b. When the first resonance occurs, if the effective length of the tube is L and the end correction is c , find the wave length λ of sound in air in terms of L and c .

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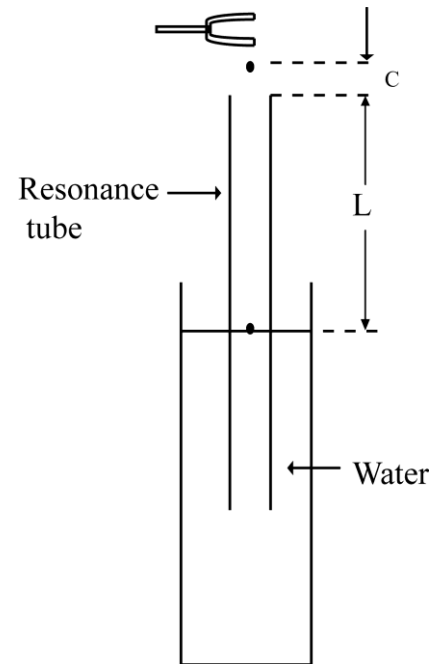
c. If the velocity of sound in air is V and the frequency of the turning fork is f , obtain a relationship among V , f , L and c

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d. The experiment is done for several values of known frequency of turning forks. The length L for the corresponding f would be measured. Arrange the equation which is derived in part c, by adjusting the variables to draw a linear graph.

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e. Draw the graph



f. How do you find the speed of sound from the graph ?

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g. How do you find the end correction from the graph ?

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h. The node is produced at the closed end correctly, but the antinode is produced just above the free end. What is the reason for this?

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i. In this experiment, a speaker connected with a signal generator can be used. What would be the advantage for using speaker with signal generator ?
