

Practice Paper - 2015
 Class – IX
 Subject – Physics

Simple pendulum is a system in which a bob is hanged from a long string .when bob travels from mean position to extreme position from one side to other and return back to mean position this is termed as one oscillation ; Time taken in completing one oscillation is called its time period its unit is second.

Frequency is number of oscillation completed in one oscillation in one second its unit is Hertz Amplitude is maximum displacement travelled from mean position to extreme position formula used in calculating time period $T=2\pi \sqrt{l/g}$ where value of $\pi=22/7$ formula 2) frequency= $1/\text{timeperiod}$ or $\text{imeperiod}=1/\text{frequency}$ formula frequency= $\text{number of oscillations}/\text{total time in seconds}$ relation between time period and length of string $=(T1/T2)^2=L1/L2$



Numericals of simple pendulum-

Q1 if a bob oscillates 20 times in 2 minutes find its frequency and time period solution

formula used frequency = number of oscillations/time = $20/2 \times 60 = 20/120 = 1/6$ hertz = .15 hertz now time period = $1/\text{frequency} = 1/(1/6) = 6$ sec

note that time should be converted in seconds before solving the numerical

: now another type of question

Q- if there are two strings of length 5m and 7 m if they are oscillating what is ratio in their time period

solution - time period of pendulum is directly proportional to underroot of length of string ie $(T_1/T_2)^2 = L_1/L_2 =$ so ratio in time period is $=(5/7)^2 = 25/49$

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