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LABORATORY WORK SHEET

Date: .....

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Exp No: 07 Experiment Name: Simple Pendulum

DAY TO DAY EVALUATION:

	Preparation	Algorithm / Performance in the Laboratory	Source Code / Calculations and Graphs	Program Execution / Results and Error Analysis	Viva voce	Total
Max. Marks	5	5	10	5	5	30
Obtained	4	4	4	4	2	19

Signature of Lab I/C

START WRITING FROM HERE:

Aim: To verify the relation of simple pendulum.

$$T = 2\pi\sqrt{l/g}$$

where, T = Periodic time in sec

l = Length of the pendulum in cm.

Description:

Condition of the experiment, a ball is supported nylon thread into a chuck possible to change the length of pendulum this makes it possible to study effect of vibration of length of periodic time small ball may be substitute by large ball to illustrate that period of oscillation is independent of ball.

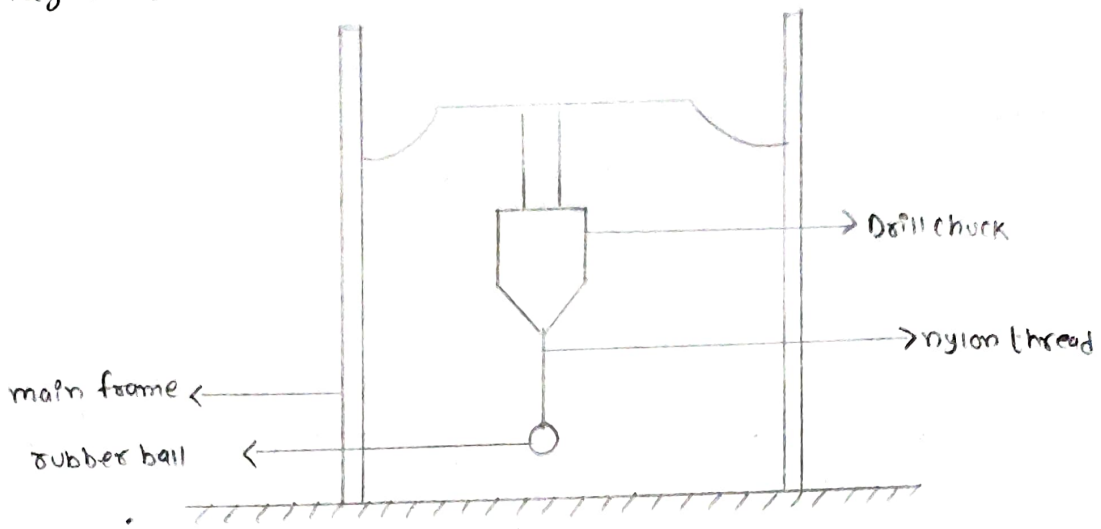
Utilities required:

Space required = 0.9m x 1.30m.

Procedure:

1. Attach the ball to one end of the thread.
2. Allow ball to oscillate and determine the periodic time T' by the time for say to oscillation.
3. Repeat the experiment by changing the length.
4) Complete the observation table given below

Diagram :



formula :

Time Period actual

$$T_{act} = t/n \text{ (sec)}$$

Time Period theoretical

$$T_{theo} = 2\pi\sqrt{L/g} \text{ sec}$$

S.No	length (mm)	No. of oscillation	time taken for 'n' observation	Actual time Period (t/n)	theoritical time Period.
1.	60	10	6.92	0.692	0.49
2	80	10	7.77	0.777	10.567
3	100	10	8.08	0.808	0.63

Nomenclature :

g = Acceleration due to gravity

l = length of the Pendulum (mm)

n = no-of oscillation

T = time taken by 'n' oscillation

T_{actual} = Actual time period

T_{Theor} = Theoritical time period

t = time recorded for 'n' oscillations

Calculations :

$$T_{actual} = t/n = 0.775 \text{ sec}$$

$$T_{theo} = 2\pi \cdot \sqrt{l/g} = 19.76 \text{ sec}$$

Result :

The relation of simple Pendulum

$T = 2\pi\sqrt{l/g}$ is verified