

PHY1002 Physics Laboratory (2022-2023 Term2)

Short Report

Name:

Student ID:

Group:

Date of experiment:

Experiment 5. Rotational Inertia (Physical Pendulum)

1. For the rectangular bar pendulum, plot the x (the distance between the pivot point and the center of gravity) vs. T (period of a physical pendulum).

(a) Determine the x that gives the minimum T .

(b) Compare the experimental results from (a) with the theoretical values.

2. Calculate the rotational inertia at the center of mass for a disk sample with the M , T , and d measured in the experiment. And compared with the theoretical value from the equation: $I = \frac{1}{2}MR^2$.

3. For irregular shape pendulum, plot the angular velocity vs. time curve and determine the constant angular acceleration. Calculate the rotational inertia at its center of mass.

Appendix:

Attach the table in Exp 5B tab “Analysis 1” and “Part II”. (You should write a clear and detailed caption for each table.)

--- End of Laboratory Report ---

Notes:

- **Submit soft copies online.**
- **No further modification allowed after deadline.**
- **No figure is required if not specified.**