

2250-1 LABORATORY REPORT

Experiment 1: Rotational Inertia of a Point of Mass Centripetal Force  
conservation of Angular Momentum

Student Name: \_\_\_\_\_ Student No.: \_\_\_\_\_

Group No.: \_\_\_\_\_ Date: \_\_\_\_\_

Part A: Rotational Inertia of a Point of Mass

Table 1.1 Theoretical Rotational Inertia

Mass	kg
Radius	m

Table 1.2 Rotational Inertia Data

	Point Mass and Apparatus	Apparatus alone
Friction Mass	kg	kg
Hanging Mass	kg	kg
Acceleration	ms <sup>-2</sup>	ms <sup>-2</sup>
Radius	m	m

Table 1.3 Results of Rotational Inertia

Rotational Inertia for Point Mass and Apparatus Combined	kg m <sup>2</sup>
Rotational Inertia for Apparatus alone	kg m <sup>2</sup>
Rotational Inertia for Point Mass (Experimental Value)	kg m <sup>2</sup>
Rotational Inertia for Point Mass (Theoretical Value)	kg m <sup>2</sup>
Percentage Difference	%

Part B: Centripetal Force

Table 2.1 Data (Varying Radius)

Mass of the object = \_\_ kg Mass hanging over the pulley

= \_\_\_\_\_ kg Slope from graph =

\_\_\_\_\_ ms<sup>-2</sup>

Radius (m)	Period, T (s)	T <sup>2</sup> (s <sup>2</sup> )

Table 2.2 Analysis

Centripetal Force = mg	N
Centripetal Force from Graph	N
Percentage Difference	%

Part C: Conservation of Angular Momentum (Optional)

Table 3.1 Data and Results

Initial Angular Speed	rad s <sup>-1</sup>
Final Angular Speed (Experimental Value)	rad s <sup>-1</sup>
Mass of Disk	kg
Mass of Ring	kg
Inner Radius of Ring	m
Outer Radius of Ring	m
Radius of Disk	m
Final Angular Speed (Theoretical Value)	rad s <sup>-1</sup>
Percentage Difference between Final Angular Speeds	%