



DEPARTMENT OF MECHANICAL ENGINEERING, University of Engineering & Technology, Lahore (KSK- Campus)

Lab Manual

Mechanics of Materials-I

EXPERIMENT NO. 3

Objective:

To measure the support reactions for a variety of configuration of simply supported beam.

Apparatus:

Simple supported beam apparatus, Hanger and weights, Meter rod.

Summary of Theory:

Theory of the Experiment includes the following topics.

- Reactions & Types of Reactions
- Load & Types of Load
- Beams & Types of Beams

Procedure:

1. Set the Beam apparatus on a horizontal surface.
2. Set the digital balance weight at zero.
3. Apply a loads at different points and measure the readings
4. Take a set of at least five readings of increasing value of load and then take readings on unloading as well.



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Observations and Calculations:

Least Count of the meter rod = _____ mm

Effective length of beam (L) = _____ mm

No. of Obs.	Effective Load-W (N)			Experimental values		Theoretical values		% error
				R _A (N)	R _B (N)	R _A (N)	R _B (N)	Th – Pr/Th x100
	P ₁	P ₂	P ₃					
1								
2								
3								
4								
5								
6								

Name: _____

Reg. # _____

Date:

Report:

The laboratory report should contain the following:

1. Plot of curve between Load and Reaction .Calculate the slope of the graph.
2. Hand calculations showing all results under procedure above.
3. A discussion of factors affecting the results of the experiment.
4. Practical Applications