Prasad V. Potluri Siddhartha Institute of Technology, Kanuru, Vijayawada

PVP20

Department of Freshman Engineering

Applied Physics Lab

Course Code	20BS1253	**Year**	I	**Semester**	II
Course Category	Basic Science	**Branch**	ME	**Course Type**	Theory
Credits	1.5	**L-T-P**	0-0-3	**Prerequisites**	Nil
Continuous Internal Evaluation	15	**Semester End Evaluation**	35	**Total Marks**	50

Course Outcomes

Upon successful completion of the course, the student will be able to

CO1	Demonstrate elastic limit and stress-strain relationship using Hooke's law [L3]
CO2	Apply resonance to estimate the frequency of a tuning fork and examine the relation between frequency and volume of a cavity. [L3]
CO3	Determine the rigidity modulus, and Poisson's ratio of a material. [L3]
CO4	Examine the type of semiconductor and evaluate the acceptance angle, numerical Aperture an optical fiber. [L4]
CO5	Estimate thermal conductivity of bad and good conductors. [L4]
CO6	Summarize and tabulate the experimental observations and output.

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			2			2					2	3	2
CO2	3			2			2					2	3	2
CO3	3			2			2					2	3	2
CO4	3			2			2					2	3	2
CO5	3			2			2					2	3	2
CO6	3			2			2					2	3	2

Syllabus

Expt. No.	Syllabus	Mapped CO's
1	To Verify Hooke's Law.	CO1,CO6
2	To Verify the relation between Volume of the Air in the Resonator and Frequency of note.	CO2,CO6
3	To Study Resonance in an LCR Series & parallel Circuit.	
4	To verify the laws of transverse vibrations of a string using Sonometer.	
5	To Determine the Frequency of Electrically maintained Tuning Fork by Melde's method.	
6	To Determine The Rigidity Modulus of Material (Wire) -Dynamic Method (Torsional Pendulum)	CO3,CO6
7	To Determine The Poisson's Ratio of Rubber tube.	
8	To Determine the Hall Coefficient using Hall Effect Experiment..	CO4,CO6
9	To Determine the Numerical Aperture of a given Optical Fibre and hence to find its Acceptance Angle.	
10	To Determine The Thermal Conductivity of A Bad Conductor By Lee's Disc Method.	CO5,CO6

Learning Resources

Text Books
1. RamaraoSri, Choudary Nityanand and Prasad Daruka, "Lab Manual of Engineering Physics" Vth ed., Excell Books, 2010
Reference Books
1. Prithwiraj Purkait, Budhaditya Biswas and Chiranjib Koley, Chapter 11 Sensors and Transducers, Electrical and Electronics Measurements and Instrumentation, 1/e., 2013 McGraw Hill Education (India) Private Limited, 2013
e- Resources & other digital material
1. https://nptel.ac.in/courses/115/105/115105120/ 2. https://nptel.ac.in/courses/115/107/115107095/ 3. https://nptel.ac.in/courses/115/104/115104109/ 4. http://www.physicsclassroom.com/The-Laboratory 5. https://www.vlab.co.in/broad-area-physical-sciences