23PHMAP122: WAVES AND OSCILLATIONS

Offered to: B.Sc. Honours (Physics) **Semester – II**

Max. Marks: 50 (CIA: 15+ SEE: 35) **30Hrs** **Credits: 01**

COURSE OBJECTIVE:

To develop practical skills in the use of laboratory equipment and experimental techniques for measuring properties of matter and analyzing mechanical systems

Course outcomes: On successful completion of this course, the students will be able to:

CO 1 Gain hands-on experience in setting up and conducting experiments related to waves and oscillations.

CO 2 Investigate and analyze the behavior of different types of waves, such as mechanical waves, sound waves, and electromagnetic waves.

CO 3 Examine resonance phenomena in various systems and understand the conditions that lead to resonance.

CO 4 Enhance skills in presenting findings through graphical representations and written reports.

CO 5 Develop critical thinking skills by solving problems related to wave mechanics and oscillatory systems.

CO-PO MATRIX								
	CO-PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**
23PHMAP122	**CO1**						2	
	CO2							2
	CO3						2	
	CO4						2	
	CO5							3

List of Experiments

1. Volume resonator experiment
2. Determination of 'g' by compound/bar pendulum
3. Simple pendulum normal distribution of errors-estimation of time period and the error of the mean by statistical analysis
4. Determination of the force constant of a spring by static and dynamic methods.
5. Determination of the elastic constants of the material of a flat spiral spring. Coupled oscillators
6. Verification of laws of vibrations of stretched string - Sonometer
7. Determination of frequency of a bar - Melde's experiment.
8. Formation of Lissajous figures using CRO.

Evaluation Procedure:

The marks distribution for the Semester End practical examination is as follows:

(A) External Lab Evaluation

Formula/ Principle / Statement with an explanation of symbols	05
Diagram/Circuit Diagram / Tabular Columns	05
Setting up of the experiment and taking readings/Observations	10
Calculations (explicitly shown) + Graph + Result with Units	05
Procedure and Precautions	04
Result	01
Viva-voce	05
(B) Continuous Assessment (Internal)	15
Total Marks:(A+B)	50