

SEMESTER-II
WAVES AND OSCILLATIONS

BLOCK-I: FUNDAMENTALS OF VIBRATIONS AND OSCILLATIONS

- UNIT-1: Simple Harmonic oscillation
- UNIT-2: Linear combination of SHM
- UNIT-3: Damped harmonic Oscillations
- UNIT-4: Forced Oscillations

BLOCK-II: WAVES IN ELASTIC MEDIA -I

- UNIT-5: Types of Progressive Waves
- UNIT-6: Doppler Effect

BLOCK-III: WAVES IN ELASTIC MEDIA -II

- UNIT-7: Vibrating Strings
- UNIT-8: Vibrations of Bars
- UNIT-9: Longitudinal Waves in Air

BLOCK-IV: COMPLEX VIBRATIONS & ULTRASONICS

- UNIT-10: Fourier Theorem
- UNIT-11: Fourier Analysis
- UNIT-12: Ultrasonic

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LAB -2: WAVES AND OSCILATIONS

1. Melde's Experiment.
2. Verification of Laws of transverse vibration of stretched string –Sonometer
3. Moment of inertia of a rectangular block-Bifilar suspension
4. Study of damping of an oscillating disc in Air and Water Logarithmic decrement.
5. Volume Resonator –determination of frequency of a tuning fork.
6. Study of Oscillations of a mass under different combination of springs-Series and Parallel.
7. Velocity of Transverse wave along a stretched string.
8. Study of coupled Oscillator –Resonance.
9. Observation of Lissajous figures from CRO-Frequency ratio Amplitude and phase difference of two waves.
10. Acceleration due to gravity -Compound Pendulum.