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VA—29—2024

FACULTY OF SCIENCE

B.Sc. (Second Year) (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(New Pattern)

PHYSICS

Paper—VI

(Waves and Oscillation)

(Thursday, 5-12-2024)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— (i) Attempt all questions.

(ii) Illustrate your answers with suitably well labelled diagram, wherever necessary.

1. Derive an expression for analytically treatment of stationary wave in an open end organe pipe. 15

Or

(a) Derive an expression of energy of plane progressive wave. 8

(b) Derive the relation between wave velocity and particle velocity. 7

P.T.O.

2. Define damped vibration. Derive differential equation for damped harmonic motion. 15

Or

- (a) Explain piezoelectric oscillator for the production of ultrasonic waves. 8
- (b) Explain the term detection of ultrasonic waves. 7
3. Attempt any *two* of the following :
- (a) Derive the differential equation of wave motion. 5
- (b) Derive an investigation of pressure and density changes at Node and Antinode 5
- (c) State the conditions for good acoustical design of an auditorium 5
- (d) Explain sharpness of Resonance. 5