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NA-29-2023

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

PHYSICS

Paper VI

(Waves and Oscillations)

(Friday, 8-12-2023)

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

Time—2 Hours

Maximum Marks—40

N.B. := All questions are compulsory.

Explain in detail analytical treatment of stationary waves for closed end organ pipe.

Or

(a) Explain differential equation of wave motion.

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- (b) A simple harmonic wave of amplitude 8 units traverses a line of particles in the direction of the positive X-axis. At any given instant of time, for a particle at a distance of 10 cm from the origin, the displacement is +6 units, and for a particle at a distance of 25 cm from the origin, the displacement is +4 units. Calculate the wavelength.

P.T.O.

2. Derive Sabine's reverberation formula. Or (a) Derive an expression for forced vibration. (b) Explain in detail undamped vibrations. 7 3. Write short notes on (any two): (a) Wave velocity and particle velocity (b) Energy is not transferred in a stationary waves (c) Damped vibrations (d) Magnetostriction oscillator.			
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(c) Damped vibrations (d) Magnetostriction oscillator.	(a)	Wave velocity and particle velocity	
(d) Magnetostriction oscillator.	(b)	Energy is not transferred in a stationary wave	s co
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	(d)	Magnetostriction oscillator.	
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