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SB—49—2022

FACULTY OF SCIENCE

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

MAY/JUNE, 2022

(New Course)

PHYSICS

Paper-VI

(Waves and Oscillations)

(Saturday, 11-06-2022)

Time : 02.00 p.m. to 04.30 p.m.

Time— 2½ Hours

Maximum Marks—40

N.B. :— (i) All questions are compulsory.

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

1. Describe the distribution of energy in a plane progressive wave. 15

Or

(a) Investigate the pressure and density changes at displacement nodes and antinodes. 8

(b) Explain detection of ultrasonic waves using acoustic grating. 7

2. What is damped vibrations ? Derive differential equation for damped harmonic motion and obtain its general solution. 15

Or

(a) Explain in detail magnetostriction oscillator for the production of ultrasonic waves. 8

(b) Describe energy is not transferred in the stationary waves. 7

P.T.O.

3. Write short notes on (any *two*) :

10

- (a) Conditions for good acoustical design in an auditorium
- (b) Differential equation of wave motion
- (c) Sharpness of resonance
- (d) Stationary waves, nodes and antinodes.