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NA—25—2023

FACULTY OF SCIENCE

B.Sc. (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

PHYSICS

Paper I

(Mechanics and Properties of Matter)

(Friday, 8-12-2023)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—40

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

(ii) Figures to the right hand side indicate full marks.

1. Define gravitational field, gravitational intensity and gravitational potential. Discuss the motion of a body near the surface of the earth in detail. 15

Or

 - (a) Obtain an expression for excess pressure inside a spherical soap bubble. 7
 - (b) Describe Jaeger's method to find surface tension of a liquid. 8

2. State and explain three types of modulus. Derive an expression for depression of a beam supported at the ends and loaded at the centre. 15

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(2)

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Or

- (a) State and prove Bernoulli's theorem for a liquid along a streamline. 7
- (b) Explain experimental determination of coefficient of viscosity by Poiseuille's method. 8
3. Write short notes on (any two) : 10
- (a) Newton's laws of motion
- (b) Surface tension
- (c) Streamline flow and critical velocity
- (d) Bending moment.

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