This question paper contains **2** printed pages]

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

P.T.O.

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.