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

SB—43—2022

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

MAY/JUNE, 2022

(New Course)

PHYSICS

Paper-I

(Mechanics and Properties of Matter)

(Saturday, 11-06-2022) **Time : 10.00 a.m. to 12.30 p.m.**

Time— 2½ *Hours* *Maximum Marks*—40

N.B. :— (*i*) *All* questions are compulsory and carry equal marks.

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

1. Define surface tension. Derive an expression for excess pressure inside a spherical drop as well as inside a spherical soap bubble. 15

Or

(*a*) Discuss the motion of a body near the surface of the Earth in detail. 8

(*b*) Explain the Ferguson method of determining surface tension of given liquid. 7

2. Derive an expression for the Young's modulus of cantilever in both the ways : weight of the beam is ineffective and effective. 15

Or

(*a*) Discuss in detail Torsional Pendulum. 8

(*b*) What is Viscosity ? Explain the coefficient of viscosity and streamline flow. 7

P.T.O.

3. Write short notes on (any *two*) : 10

(*a*) Newton's law of Gravitation

(*b*) Molecular Forces

(*c*) Critical Velocity of Liquid

(*d*) Bending Moment.