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GA—36—2023

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION
APRIL/MAY, 2023

(New Course)

PHYSICS

(Mechanics and Properties of Matter)

(Friday, 28-4-2023)   **Time : 10.00 a.m. to 12.00 noon**

Time— Two Hours   *Maximum Marks—*40

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

(ii)   Figures to the right indicate full marks.

1.   Define surface tension. Describe in detail the Jaeger's method to find surface tension of a liquid.   15

Or

(a)   State and explain work energy theorem.   7

(b)   Define gravitational field and gravitational intensity. Derive an expression for gravitational potential.   8

2.   Define coefficient of viscosity of a liquid. Describe the Poiseuille's method for measuring the coefficient of viscosity of a liquid.   15

Or

(a)   Show that the twisting couple per unit twist in the case of cylinder or a wire, $C = \dfrac{\pi \eta r^4}{2l}$.   8

(b)   Obtain relation connecting three elastic constants.   7

P.T.O.

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

   (*a*) Keplar's law of planetary motion

   (*b*) Excess pressure inside a spherical liquid drop

   (*c*) Bernoulli's theorem

   (*d*) Hooke's law and Young's modulus.