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X—52—2019

FACULTY OF SCIENCE

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

OCTOBER/NOVEMBER, 2019

(CBCS/New Pattern)

PHYSICS

Paper I

(Mechanics and Properties of Matter)

(Monday, 18-11-2019)   **Time : 10.00 a.m. to 12.00 noon**

Time—2 Hours   *Maximum Marks—40*

N.B. :— Attempt *all* questions.

1. Explain Jaeger's method to find surface tension of liquid.   15

                                        Or

    (*a*)   Explain in detail work energy theorm.   8

    (*b*)   State and explain Newton's laws of motion.   7

2. Derive the expression for Poiseuille's equation for flow of liquid through a
    tube.   15

                                        Or

    (*a*)   Derive the expression for period of Torsional pendulum.   8

    (*b*)   What is cantilever and give the expression for depression when the
            weight of the beam is ineffective.   7

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

    (*a*)   State and explain Newtons law of gravitation

    (*b*)   Derive the expression for excess pressure inside a spherical drop

    (*c*)   Explain coeffecent of viscosity and streamline flow

    (*d*)   State Hooke's law and define elastic constants (γ, κ, η).