

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - I

22UPHCT1001- Properties of Matter

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section A

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Define gravitational constant and deduce its dimension.
2. Explain the gravitational field and gravitational potential.
3. State and explain Hooke's law.
4. Define Poisson's ratio and write its significance.
5. Explain torsional couple.
6. Interpret surface tension and derive its dimension.
7. Define coefficient of viscosity and write its dimension.
8. Describe friction and lubrication.

Section B

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Determine the gravitational constant using Boys method. Write the merits of Boys method.
10. Determine the young's modulus of a material using uniform bending method with the necessary theory.
11. Explain how you would determine the rigidity modulus of the material by using torsion pendulum. Derive the formula used.
12. Describe the Jaegar's method of calculating the surface tension of a liquid with a neat sketch.
13. Deduce Poiseuille's formula for the flow of liquid through a capillary tube.
