

Roll.No.

20UCHAT3003

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.Physics - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - III

20UCHAT3003 - Allied Physics - I

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Define simple harmonic motion. Derive its equation.
2. Show an expression for the bending moment of a beam.
3. Apply the burette method to compare the viscosities of two liquids.
4. Sketch the postulates of kinetic theory of gases.
5. Compute an expression for the loss of energy due to sharing of charges.
6. What is terminal velocity and derive an expression for it.
7. Explain some of the applications of Ultrasonic waves medicine and industry.
8. State and explain Biot - Savart's Law.

Section C

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

9. Explain the effect of composition of two simple harmonic motion along a straight line.
10. Give the theory and method of determining the rigidity modulus of a wire using torsional pendulum.
11. Derive Poiseuille's formula to determine the coefficient of viscosity of a liquid.
12. Explain how ultrasonic waves are produced by piezoelectric method.
13. Describe the principle of a potentiometer. Use it to calibrate the low range voltmeter and draw the calibration graph.
