

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.(Maths) - END SEMESTER EXAMINATIONS APRIL-2023

SEMESTER - I

**22UMAAT1D01 - Allied Physics - I**

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

### Section B

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

1. Discuss about experimental method for obtaining Lissajous figures.
2. Give the relation between elastic constants.
3. Explain the experimental determination of interfacial surface tension by drop weight method.
4. Describe the experimental determination of AC frequency using the sonometer.
5. How is the comparison of emf done using potentiometer?
6. Give the difference between free, damped and forced vibrations with example.
7. Discuss about the experiment to determine young's modulus by non-uniform bending.
8. Discuss the experimental setup for calibration of low range voltmeter using potentiometer.

### Section C

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

9. Discuss about the composition of two simple harmonic motions of equal time periods at right angles in detail.
10. Describe the method to determine the Rigidity modulus of a wire by static torsion method.
11. Derive an expression for Poiseuille's formula.
12. What are ultrasonic? Describe in detail to produce Ultrasonic waves by piezoelectric method.
13. Derive an expression for magnetic induction at a point on the axis of a circular coil.

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