

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 APRIL-2023

SEMESTER - II

**22UPHCT2003 - Acoustics and Thermodynamics**

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

### Section B

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

1. Distinguish between loudness and intensity of sound.
2. Arrive at the Sabine's formula for reverberation time.
3. Describe the properties of ultrasonic waves.
4. List down the applications of ultrasonics to various fields.
5. Describe on thermodynamic equilibrium.
6. State all the laws of thermodynamics.
7. Differentiate between a diesel engine and a petrol engine.
8. Obtain an expression for the change of entropy in a reversible process.

### Section C

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

9. Derive the differential equation of motion of a body under forced vibrations.
10. Explain any one method of production of ultrasonic waves.
11. State first law of thermodynamics and explain how it is applied to isothermal and adiabatic processes.
12. Derive an equation for finding the efficiency of a Carnot engine.
13. Derive all the Maxwell's thermodynamic relations.

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