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 EXAMINATION APRIL/NOV - 2021
SEMESTER - II
16UPHCT2A03 & UPH/CT/2A03 - Acoustics and Thermodynamics

Total Duration : 3 Hrs		**Total Marks : 75**	
MCQ	: 30 Mins	MCQ	: 15
Descriptive	: 2 Hrs.30 Mins	Descriptive	: 60

Section B

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

1. Derive the expression for free vibrations.

2. List out the applications of ultrasonics in science and industry.

3. What is isothermal process? Calculate the work done during the isothermal process.

4. Describe the working of a Petrol engine.

5. Derive any two Maxwell's thermodynamic relations.

6. Explain the statement of Fourier's theorem.

7. State and explain all the laws of thermodynamics.

8. Discuss about Magnetostriction method.

Section C

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

9. Derive an expression for forced vibrations.

10. Write an account on production of ultrasonic waves by Piezo electric method.

11. Describe the parts and working of Carnot engine and obtain an expression for its efficiency of working.

12. State reversible and irreversible process and calculate the change in entropy during those process.

13. Derive the Adiabatic equation of a perfect gas and derive an expression for work done in it.