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 -2023
SEMESTER - I

22UPHCT1002 - Thermal Physics

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

Section B

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

1. Explain the temperature characteristics of thermistors.
2. Discuss the principles of adiabatic demagnetization.
3. Define coefficient of thermal conductivity. Derive an expression for coefficient of thermal conductivity.
4. How will you experimentally verify Stefan's law?
5. Explain Dulong and Petit's law. Mention also its failure.
6. Derive Mayer's relation between Cp $\&$ Cv.
7. Discuss the rectilinear flow of heat along a bar of uniform area of cross-section.
8. Determine Stefan's constant.

Section C

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

9. Discuss the construction and working of platinum resistance thermometer.
10. Derive Wein's displacement law and Stefan's law from Planck's radiation law.
11. State and derive Dulong and petits law.
12. Derive an expression for thermal conductivity of bad conductor using Lee's Disc method.
13. Discuss in detail the connective equilibrium of the atmosphere.

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