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 EXAMINATIONS APRIL-2022
SEMESTER - I
20UPHCT1002 - Thermal Physics

Total Duration : 3 Hrs. **Total Marks : 60**

Section A

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

1. List out the types of thermometers. Revise the platinum resistance thermometers.
2. Relation between Mayer's Cp and Cv.
3. Explain the Carnot's cycle as refrigerator.
4. Define thermal conductivity. Solve that a metal rod 0.4m long and 0.04m in diameter has one end at 373K and another end at 273K. Calculate the total amount of heat in 1minute. (Given K = 385 J/m s ^oC) .
5. What is radiation? Describe Stefan's law of radiation.
6. Predict the Cv by Joly's method.
7. Apply the practical applications of low temperatures.
8. Examine the energy distribution in Blackbody radiation.

Section B

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

9. Explain in detail the Callender and Griffith's bridge with suitable diagram.
10. Diagnose the Regnault's method of determining the specific heat capacity of a gas at constant pressure.
11. Recommend the porous – plug experiments and apply conclusion from it.
12. Evaluate Lee's disc method for determining the thermal conductivity of a bad conductor.
13. Deduce the Wein's law and application of it. Solve that if the light from the Sun is found to have a maximum intensity near the wavelength of 500nm. Determine the temperature of the surface of the Sun.

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