

Department of Physics

Mugberia Gangadhar Mahavidyalaya

1st internal assessment , Semester I, 2023-2024

Paper name: Foundation of Physics -1 (Introduction to Thermodynamics)

Answer any five

full marks: 10

1. State Zeroth, first and second law of thermodynamics. (2)
2. Calculate the work done in adiabatic process for ideal gas. (2)
3. Drive the general relation between C_p and C_v . (2)
4. Prove that Kelvin-Planck and Clausius Statements are equivalent. (2)
5. A Carnot engine has an efficiency of 60% when its sink temperature is at 27°C. Calculate the change in the source temperature for increasing its efficiency to 70%. (2)
6. For a reversible engine, show that $\sum Q/T = 0$. (2)
7. Write the postulates of molecular kinetic theory of ideal gas. (2)