

KATWA COLLEGE

DEPARTMENT OF PHYSICS

INTERNAL ASSESSMENT EXAMINATION -2023

B.Sc. (H), SEMESTER: - III, PAPER:- CC-VI (THERMAL PHYSICS)

F.M: 10

TIME: 1 HOUR

❖ Answer any five from the following questions: - 5 x 2 = 10

1. Define intensive and extensive thermodynamic variable, giving one example of each.
2. Show that $\gamma = 1 + \frac{2}{f}$, where γ is the ratio of specific heat and f is the degrees of freedom of a gas.
3. What do you mean by reversible and quasistatic process?
4. What do you mean by adiabatic work? Explain whether it is a state function or not.
5. Write down the Maxwell distribution of molecular velocities in an ideal gas.
6. What is the best strategy to improve the efficiency of a Carnot engine by raising the temperature of the source or by lowering the temperature of the sink?
7. Show that change of entropy in a process is path independent.
8. Write down both the statement of second law of thermodynamics given by Kelvin-Planck and Clausius.