ADITYA DEGREE COLLEGE, KAKINDA

PEFINAL EXAMINATION
II B.Sc IV SEM- PHYSICS

TOTAL TIME:2Hrs   **TOTAL MARKS:75**

SECTON-A

Answer any Four questions   **5 x 5=25m**

1. Describe how Maxwell's speed distribution law is verified by Lammert's tootherd wheel method.

2. What is entropy? What is its physical significance?

3. Explain clausius- clapeyron equation?

4. Derive $C_P - C_V = R$?

5. Distinguish between Joule Thomson expansion and adiabatic expansion?

6. Describe how temperature of the sun can be calculated?

7. Explain the effect of fluoro chloro carbons on ozone layer

8. A Carnot's engine works between $227^0 C$ and 27^0 find its efficiency?

SECTON-B

Answer all questions   **5 x 5=25m**

9. (a) Explain coefficient viscosity and coefficient of conductivity on the basis of kinetic theory of gases.

   (b) Derive an expression for Maxwell's law of distribution of speeds among the molecules of gas on

   the basis of Kinetic theory of gases

10. (a) Explain the working of Carnot's heat engine? obtain expression for its efficiency

    (b) Explain temperature and entropy diagram ? what are its uses

11. (a) What are thermo dynamic potentials? Obtain Maxwell's equations from them ?

    (b) What is Joule-Kalvin effect? What are experimental results. Obtain expression for joule Kelvin

    coefficient?

12. (a) What is meant by adiabatic demagnetisation? Give its Theory?

    (b) Explain how helium is liquefied with neat diagram ?

13. (a) Derive Plancks radiation law. Deduce Wien's law and Rayligh-Jean's law from planck's law?

    (b) Define solar constant ? Describe how it can be determined by Angstrom's pyrheliometer