Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

B.Sc.(CS) (Sem.–3)

STATISTICAL PHYSICS & THERMODYNAMICS

Subject Code : BCS-304

M.Code : 71776

Date of Examination : 19-12-22

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.**

SECTION-A

1. Answer briefly :

a) What do you mean by additive nature of entropy?

b) Define probability.

c) Write down the expression for $C_p - C_v$.

d) Define Joule-Thompson effect.

e) What do you mean by thermo-magnetic effect?

f) What are first and second order phase changes?

g) Explain the effect of constraints on the probability of a system?

h) Define phase space.

i) What is the difference between bosons and fermions?

j) What do you mean by partition function?

SECTION-B

2. Explain the different steps of Carnot cycle in detail.

3. Discuss the experimental verification of Maxwell Boltzmann law of distribution of molecular speeds.

4. Explain the concept of microstates and macrostates in detail giving suitable example.

5. Discuss first order phase change and derive Clausius-Clayperon equation.

6. What do you mean by reversible and irreversible processes? Explain giving examples of each.

7. Discuss in detail Joule-Thompson effect.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.