

CR-2532
M. Sc. (First Semester) Examination,
Nov.-Dec. 2018
PHYSICS
Paper : Second
(Statistical Mechanics)
Time Allowed : Three hours
Maximum Marks : 40

Note : Attempt questions of all two sections as directed. Distribution of marks is given with sections.

Section-A'

5x3+15

Note : Attempt all the questions. Each question carries 3 marks.

1. Explain entropy of mixing?

Or

Represent thermodynamic variables.

2. Explain phase space?

Or

What do you mean by density of states?

3. Distinguish between F.D. and B.E. Statistics?

Or

Explain statistics of ensembles?

4. What do you mean by Brownian motion?

Or

What do you mean by transport phenomena?

5. Why we study statistical mechanics?

Or

Define types of ensembles?

Section-'B

5*5=25

Note : Attempt all the questions. Each question carries 5 marks.

6. Describe Gibb's Paradox?

Or

Specify different types of states of a system?

7. Explain canonical and Grand canonical ensembles.

Or

Describe energy and density fluctuations.

8. Describe B.E. Condensation.

Or

Explain Maxwell-Boltzmann Statistics.

9. Why we study Langevin theory? Explain.

Or

Describe Fokker-Planck equation.

10. Write short notes on : (any two)

(i) Classical ideal gas

(ii) Ideal Bose gas

(iii) Fluctuations

(iv) Density matrix