Roll No. ....

Y – 3124

M.Sc. (Physics) Fourth Semester EXAMINATION, May/June-2021

Paper – 403

STATISTICAL MECHANICS

Time : Three Hours

Maximum Marks : 85   *Minimum Pass Marks : 29*

Note—Attempt *all* questions.

Unit-I

1. Describe liquid helium in detail. Express its properties in different states. Explain liquefaction in brief. Explain the characteristic of liquid helium in brief also.

17

Unit-II

2. Explain one dimension random walk problem in detail.   17

Unit-III

3. What is rotational partition function ? Explain the molecular rotational partition function with different cases using appropriate mathematical expression.

17

Unit-IV

4. Explain two fluid model for liquid helium.   17

Unit-V

5. Give thermodynamically potential functions and obtain relation between them.

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