



Shree H.N. Shukla group of colleges

PHYSICS

T.Y.B.Sc. (Sem. VI) (CBCS)

Unit Test examination

PAPER- 602

UNIT - 1 : CLASSICAL DISTRIBUTION LAW

DATE :

TOTAL MARKS : 30

Instructions: All questions are compulsory.

The right side figure indicates total marks of the question.

Draw the figure wherever necessary.

Write answers of all the questions in main answer sheets.

SECTION-A

Q.1: One marks questions:

[5 MARKS]

- 1 The electrons are regarded as _____.
- 2 "Fermions" are identical and indistinguishable particles with _____ spin.
- 3 How many coordinates does the phase space have ? Name them.
- 4 Which type of statistical law is applicable for photons?
- 5 What is the least volume for occupied by the Phase cell?

SECTION – B

Q.2 (A): Short Questions: Write all three : [2 Marks each]

[6 MARKS]

- 1 Give the expression for Maxwell Boltzmann statistics ?
- 2 Give two examples of each of Boltzons, Fermions and Bosons.
- 3 Find the value of $50!$ using Stirling's approximation.

Q.2 (B) : Short questions: Write all three: [3 Marks each]

[9 MARKS]

- 1 State and prove the Stirling's approximation.
- 2 Give the expression for F-D AND B-E statistics ?
- 3 Define : Macro states and Micro states.

Q.2 (C): Write Detail Note on [Any two]: [5 Marks each]

[10 MARKS]

- 1 Define distribution law for Maxwell Boltzmann statistics.
- 2 Define distribution law for Fermi Dirac statistics.
- 3 Define distribution law for Bose - Einstein statistics.
- 4 Give comparison between M-B, F-D, and B-E statistics .