**Name of Assistant Professor: Miss. Jyoti**

**Class and Section:…B.Sc 2nd year,4th …** Semester and Section-A

**Subject: …Physics….**

**Lesson Plan**: 18Weeks (from January 2018 to April 2018)

|  |
| --- |
| Week 1, **January 1 to January 7**  Unit 1Statistical Physics 1  Chapter1 Some basic ideas of statistical physics |
| Week 1, Day 1, January 1   * 1.1 Introduction * 1.2 Terminology to be used |
| Week 1, Day 2, January 2   * 1.3 Permutation and combination * 1.4 Difference between Permutations and combinations |
| Week 1, Day 3, January 3   * 1.5 Basic ideas of probability * 1.6 Definitation of probability * 1.7 Probability Theorams |
| Week 1, Day 4, January 4   * 1.8 Some Probability considerations * 1.9 Expected no of cases in which an event may occur |
| Week 1, Day 5, January 5 **Holiday** |
| Week 1, Day 6, January 6   * 1.10 Tossing of two coins * 1.11Tossing of similar and unlike coins * 1.12 Throwing of two dice |
| Week 2, **January 8 to January14** |
| Week 2, Day 1, January 8   * 1.13 Probability of occurance nd non occurance of an event * 1.14 Case of a box divided into equal sized compartments |
| Week 2, Day 2, January 9   * 1.15Tossing of any no. of coin * 1.16Combination possessing maximum probability * 1.17 Combination of possessing minimum probability |
| Week 2, Day 3, January 10   * 1.18 Distribution of N particles in two boxes of equal size * 1.19 Microstates and macrostates of a system of particles |
| Week 2, Day 4, January 11   * 1.20 Thermodynamic Probability * 1.21Constrains and accessible states * 1.22 Distribution of n particles in two boxes of equal size |
| Week 2, Day 5, January 12   * 1.23Case with weightage * 1.24Binomial Theoram of Probability |
| Week 2, Day 6, January 13   * 1.25Stirling’s Approximation * 1.26 Most probable distribution and statistical fluctuations |
| Week 3, **January 15 to January 21** |
| Week 3, Day 1, January 15   * Powerpoint presentation |
| Week 3, Day 2, January 16   * 1.27 Successive and simultaneous events * 1.28Some important results on probability |
| Week 3, Day 3, January 17   * 1.29 Inverse Probability * 1.30 Static and dynamic systems |
| Week 3, Day 4, January 18   * 1.31 Postulates of statistical physics * 1.32 General expression for Probability |
| Week 3, Day 5, January 19   * 1.33 The condition of equilibrium between two system in thermal contact |
| Week 3, Day 6, January 20   * 1.34 Entropy and Probability |
| Week 4, **January 22 to January 28** |
| Week 4, Day 1, January 22 **Holiday** |
| Week 4, Day 2, January 23   * Discuss problems |
| Week 4, Day 3, January 24   * Doing examples from Unit1 |
| Week 4, Day 4, January 25   * Revision of topics from 1.1 to 1.10 |
| Week 4, Day 5, January 26 **Holiday** |
| Week 4, Day 6, January 27   * Revision of topics from 1.11 to 21 |
| Week 5, **January 29 to February4** |
| Week 5, Day 1, January 29   * Revision of topics from 1.22 to 1.34 |
| Week 5, Day2, January 30   * Class test Unit1 |
| Week 5, Day 3, January 31 **Holiday** |
| Week 5, Day 4, February  Unit 2 Statistical physics 2  Chapter 2 Maxwell Boltzman Statics   * 2.1 Phase space |
| Week 5, Day 5, February 2   * 2.2 Phase space volume available to the system |
| Week 5, Day 6, February 3   * 2.3 Size of phase space cell |
| **Week 6, February 5to February 11** |
| Assignments :- Assignment 1st |
| Week 6, Day 1, February 5   * `2.4 Division of phase space into compartments and cells |
| Week 6, Day 2, February 6   * 2.5 Occuopation index |
| Week 6, Day 3, February 7   * 2.6 Number of the phase space cells in the momentum interval pand p+dp |
| Week 6, Day 4, February 8   * 2.7Three types of statistics |
| Week 6, Day 5, February 9   * 2.8 Basic approach in three statistics * 2.9 Maxwell Boltzman statistics applied to an ideal gas in equilibrium |
| Week 6, Day 6, February 10 **Holiday** |
| Week 7, **February 12 to February 18** |
| Week 7, Day 1, February 12   * 2.10Continous distribution of molecular energies |
| Week 7, Day 2, February 13 **Holiday** |
| Week 7, Day 3, February 14   * 2.11 Determination of unknown constant |
| Week 7, Day 4, February 15   * Quiz competition |
| Week 7, Day 5, February 16   * 2.12 Maxwell Boltzman Law of distribution of speeds |
| Week 7, Day 6, February 17   * 2.13Discussion and graphical representation of Maxwel’s speed distribution law |
| Week 8 **February 19 to February25** |
| Week 8, Day 1, February 19   * Class test of Unit 2 from covered topics |
| Week 8, Day 2, February 20   * 2.14Maxwell Boltzman velocity Distribution law |
| Week 8, Day 3, February 21   * 2.15 Discussion of maxwell’s velocity probability distribution function |
| Week 8, Day 4, February 22   * 2.16 Some useful standard definite integrals |
| Week 8, Day 5, February 23   * 2.17 Expression for average or mean value of velocity ,Most probable speed and root mean square velocity |
| Week 8, Day 6, February 24   * 2.18 Expressions for average or mean speed and root mean square speed in case of Maxwell Distribution law |
| Week 9, **February26 to March4** |
| Week 9, Day 1, February 26   * Discussion of problems |
| Week 9, Day 2, February 27   * Class test of Unit 2 |
| Week 9, Day 3, February 28 **Holiday** |
| Week 9, Day 4, March 1 **Holiday** |
| Week 9, Day 5, March 2 **Holiday** |
| Week 9, Day 6, March 3 **Holiday** |
| Week 10, **March 5 to March11**  Unit 3 Quantum statistics |
| Chapter 3 Bose Einstein and Fermi dirac Statistics |
| Week 10, Day 1, March 5   * 3.1 Classical versus Quantum statistics |
| Week 10, Day 2, March 6   * 3.2 Ideal Particles |
| Week 10, Day 3, March 7   * 3.3 Bose Einstein Statistics |
| Week 10, Day 4, March 8   * 3.4 Continuum limit |
| Week 10, Day 5, March 9   * 3.5Black Body Raditions |
| Week 10, Day 6, March10   * 3.6 Application of B.E.Statistics to plank’s radiation law |
| Week 11, **March 12 to March 18** |
| Week 11, Day 1, March 12   * 3.7 Bose Einstein gas |
| Week 11, Day 2, March 13   * 3.8Maxwell Boltzman distribution as a limiting case of Bose Einstein distribution |
| Week 11, Day 3, March 14   * 3.9 Degeneracy and Bose Einstein Condensation |
| Week 11, Day 4, March 15   * 3.10 Fermi dirac Statistics |
| Week 11, Day 5, March 16   * 3.11Continuum limit |
| Week 11, Day 6, March 17   * 3.12 Fermi dirac gas and Fermi energy |
| Week 12, **March 19 to March25** |
| Week 12, Day 1, March 19   * Group discussion |
| Week 12, Day 2, March 20   * 3.13Defination of Fermi energy at temperatures other than absolute zero |
| Week 12, Day 3, March 21   * Class test of Unit 3 from covered topics |
| Week 12, Day 4, March 22   * 3.14 Degeneracy of Fermi gas |
| Week 12, Day 5, March 23   * 3.15 Electron gas in metals |
| Week 12, Day 6, March 24   * 3.16 Specific heat anomaly of metals and its solution |
| Week 13, **March26to April** |
| Assignments :Assignment 2nd |
| Week 13, Day 1, March 26   * 3.17 Comparison of M-b,B-E,F-D Statistics |
| Week 13, Day 2, March 27   * Discussion of conceptual questions |
| Week 13, Day 3, March 28   * Doing examples |
| Week 13, Day 4, March 29 **Holiday** |
| Week 13, Day 5, March 30   * Discussion of problems |
| Week 13, Day 6, March 31   * Class test of Unit 3 |
| Week 14, **April 2 to April 8**  Unit 4 Theory of specific heat of solids |
| Week 14, Day 1, April 2   * 4.1 Basic Concepts |
| Week 14, Day 2, April 3   * 4.2 Dulong and Pett’s law |
| Week 14, Day 3, April 4   * 4.3 Derivation of Dulong and Pett’s law from Classical physics |
| Week 14, Day 4, April 5   * `4.4Specific heat at low temperature |
| Week 14, Day 5,April6   * 4.5 Einstein theory of lattice specific heat of solids |
| Week 14, Day 6, April 7   * Chart /Poster making Competition and exhibition |
| Week 15, **April 9 to April15** |
| Week15 , Day 1, April 9   * 4.6 Debye Model Of specific heat of solids |
| Week 15, Day 2, April 10   * Revision of topic 4.1 |
| Week 15, Day 3, April 11   * Revision of topic 4.2 |
| Week 15, Day 4, April 12   * Revision of topic 4.3 |
| Week 15, Day 5, April 13   * Revision of topic 4.4 |
| Week 15, Day 6, April 14 **Holiday** |
| Week 16, **April 16 to April22** |
| Week 16, Day 1, April 16   * Revision of topic 4.5 |
| Week 16, Day 2, April 17   * Revision of topic 4.6 |
| Week 16, Day 3, April 18 **Holiday** |
| Week 16, Day 4, April 19   * Discussion of conceptual questions |
| Week 16, Day 5, April 20   * Class test of Unit 4 |
| Week 16, Day 6, April 21   * Revision of Unit 1 |
| Week17 **April 23 to April28** |
| Week17 , Day 1, April 23   * Revision of Unit 2 |
| Week 17, Day 2, April 24   * Revision of Unit 3 |
| Week 17, Day 3, April 25   * Revision of Unit 4 |
| Week 17, Day 4, April 26   * Discussion of Previous year question paper |
| Week 17, Day 5, April 27   * Discussion of previous year question paper |
| Week 17, Day 6, April 28   * Class test of full syllabus |
| Week 18 **April 30 to May 6** |
| Week18 , Day 1, April 30 **Holiday** |