

Name of Assistant/Associate Professor: Smt. Nidhi Sharma

Class & Section: - B Sc - III

Subject: - SOLID STATE NANO PHYSICS

Subject Lesson Plan: 18 weeks (from January 2018 to April 2018)

Week 1
Chapter/Unit _1_: CRYSTAL STRUCTURE
Week 1, Day 4, 04/01/2018 CRYSTALLINE & GLASSY FORMS
Week 1, Day 5, 05/01/2018 LIQUID CRYSTAL, CRYSTAL STRUCTURE
Week 1, Day 6, 06/01/2018 PERIODICITY, LATTICE, BASIS
Week 2
Chapter/Unit _1__: CRYSTAL STRUCTURE
Week 2, Day 4, 11/01/2018 TRANSLATION VECTORS, AXES
Week 2, Day 5, 12/01/2018 UNIT CELL, PRIMITIVE CELL
Week 2, Day 6, 13/01/2018 WINGER SEITZ PRIMITIVE CELL
Week 3
Chapter /Unit 1_: CRYSTAL STRUCTURE
Week 3, Day 4, 18/01/2018 SYMMETRY OPERATIONS FOR A TWO DIM CRYSTAL
Week 3, Day 5, 19/01/2018 BRAVAIS LATTICE IN TWO- THREE DIMENSIONS
Week 3, Day 6, 20/01/2018 CRYSTAL PLANES, MILLER INDICES
Week 4
Chapter/Unit _1_: CRYSTAL STRUCTURE
Week 4, Day 4, 25/01/2018 INTERPLANER SPACING
Week 4, Day 6, 27/01/2018 CRYSTAL STRUCTURES OF ZINC SULPHIDE
Week 5
Chapter/Unit _1_: CRYSTAL STRUCTURE
Week 5, Day 4, 01/02/2018 SODIUM CLORIDE
Week 5, Day 5, 02/02/2018 DIAMOND
Week 5, Day 6, 03/02/2018 X-RAY DIFFRACTION
Week 6
Chapter/Unit _2_:
Week 6, Day 4, 08/02/2018 BRAGG LAW
Week 6, Day 5, 09/02/2018 EXPERIMENTAL XRAY DIFFRACTION METHODS

Week 7
Chapter/Unit _2_:
Week 7, Day 4, 15/02/2018 K-SPACE
Week 7, Day 5, 16/02/2018 RECIPROCAL LATTICE
Week 7, Day 6, 17/02/2018 ITS PHYSICAL SIGNIFICANCE
Week 8
Chapter/Unit _2_:
Week 8, Day 4, 22/02/2018 RECIPROCAL LATTICE VECTORS
Week 8, Day 5, 23/02/2018 RECIPROCAL LATTICE TO SIMPLE CUBIC LATTICE
Week 8, Day 6, 24/02/2018 BCC
Week 9
Chapter /Unit __:
Week 9, Day 6, 03/03/2018 FCC
Week 10
Chapter/Unit 3__:
Week 10, Day 4, 08/03/2018 Historical Introduction Survey of Super Conductivity
Week 10, Day 5, 09/03/2018 Super Conducting System
Week 10, Day 6, 10/03/2018 High TC, Superconductors
Week 11
Chapter/Unit __:
Week 11, Day 4, 15/03/2018 Isotope Effects, Critical Magnetic Field
Week 11, Day 5, 16/03/2018 Meissner Effect
Week 11, Day 6, 17/03/2018 London Theory
Week 12
Chapter/Unit __:
Week 12, Day 4, 22/03/2018 Peppard Equation
Week 12, Day 6, 24/03/2018 Classification of Super Conductors
Week 13
Chapter/Unit __:
Week 13, Day 5, 30/03/2018 BCS Theory
Week 13, Day 6, 31/03/2018

Flux Quantization, Josephson Effect
Week 14
Chapter/Unit __:
Week 14, Day 4, 05/04/2018
Practical Application of Super conductivity and their limitations
Week 14, Day 5, 06/04/2018
Power Applications of Super conductors
Week 14, Day 6, 07/04/2018
Definition Length Scale
Week 15
Chapter/Unit __:
Week 15, Day 4, 12/04/2018
Importance of Nano scale and Technology
Week 15, Day 5, 13/04/2018
History of Nano Technology
Week 16
Chapter/Unit __:
Week 16, Day 4, 19/04/2018
Benefits and challenges in Molecular Manufacturing
Week 16, Day 5, 20/04/2018
Molecular Assembler Concepts
Week 16, Day 6, 21/04/2018
Understanding Advanced Capabilities
Week 17
Chapter /Unit __:
Week 17, Day 4, 26/04/2018
Vision and Objectives of Nano Technology
Week 17, Day 5, 27/04/2018
Nano Technology in Different Fields , Automobile Electronics
Week 17, Day 6, 28/04/2018
Nano biotechnology and materials and Medicines

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Week 1

Unit 1: Crystal Structure 1

Week 1, day 1, Date 01.01.2018

1.1.1 Crystalline and glassy forms

Week 1, day 2, Date 02.01.2018

1.1.2 Liquid crystals

Week 1, day 3, Date 03.01.2018

1.1.3 Crystal structure

1.1.4 Periodicity

Week 2

Unit 1: Crystal structure 1

Week 2, day 1, Date 08.01.2018

2.1.5 Lattice and bases

2.1.6 Crystal translational vectors and axes

Week 2, day 2, Date 09.01.2018

2.1.7 Unit cell and primitive cell

2.1.8 Wigner Seitz primitive cell

Week 2, day 3, Date 10.01.2018

2.1.9 Symmetry operations for a two dimensional crystal

Week 3

Unit 1: Crystal structure 1

Week 3, day 1, Date 15.01.2018

3.1.10 Bravais lattices in two and three dimensions

Week 3, day 2, Date 16.01.2018

3.1.11 Crystal planes and Miller indices

Week 3, day 3, Date 17.01.2018

3.1.12 Interplanar spacing

3.1.13 Crystal structure of zinc sulphide

Week 4

Unit 1: Crystal structure 1

Week 4, day 1, Date 22.01.2018

Basant Panchmi Holiday

Week 4, day 2, Date 23.01.2018

4.1.14 Crystal structure of Sodium chloride and Diamond

Week 4, day 3, Date 24.01.2018

Chhotu Ram Jayanti Holiday

Week 5

Unit 1: Crystal structure 1

Week 5, day 1, Date 29.01.2018

Inviting queries and doubts on Unit-1

Week 5, day 2, Date 30.01.2018

Test based on Unit-1

Week 5, day 3, Date 31.01.2018

Unit 2: Crystal structure 2

5.2.1 X-ray diffraction

5.2.2 Bragg's law

Week 6

Unit 2: Crystal structure 2

Week 6, day 1, Date 05.02.2018

6.2.3 Experimental X-ray diffraction methods

Week 6, day 2, Date 06.02.2018

6.2.3 continued.

Week 6, day 3, Date 07.02.2018

6.2.4 K space.

Week 7

Unit 2: Crystal structure 2

Week 7, day 1, Date 12.02.2018

7.2.5 Reciprocal lattice

Week 7, day 2, Date 13.02.2018

Mahashivratri Holiday .

Week 7, day 3, Date 14.02.2018

7.2.6 Physical significance of reciprocal lattice

Week 8

Unit 2: Crystal structure 2

Week 8, day 1, Date 19.02.2018

8.2.7 Reciprocal lattice vectors

Week 8, day 2, Date 20.02.2018

8.2.8 Reciprocal lattice to a simple cubic lattice ,b.c.c and f.c.c

Week 8, day 3, Date 21.02.2018

8.2.8 Continued.

Week 9

Week 9, day 1, Date 26.02.2018

Inviting queries and doubts on Unit-2

Week 9, day 2, Date 27.02.2018

Test based on Unit-2

Week 9, day 3, Date 28.02.2018

Vacation

Week 10

Unit 3: Super Conductivity

Week 10, day 1, Date 05.03.2018

10.3.1 Historical introduction

Week 10, day 2, Date 06.03.2018

10.3.2 Survey of superconductivity

Week 10, day 3, Date 07.03.2018

10.3.3 Superconducting system

10.3.4 High critical temperature superconductors

Week 11

Unit 3: Super Conductivity

Week 11, day 1, Date 12.03.2018

11.3.5 Isotopic effect

Week 11, day 2, Date 13.03.2018

11.3.6 Critical magnetic effect

Week 11, day 3, Date 14.03.2018

11.3.7 Meissner effect

Week 12

Unit 3: Super Conductivity

Week 12, day 1, Date 19.03.2018

12.3.8 London theory and Pippard's equation

Week 12, day 2, Date 20.03.2018

12.3.9 Classification of superconductors

Week 12, day 3, Date 24.03.2018

12.3.10 BCS theory of superconductivity

Week 13

Unit 3: Super Conductivity

Week 13, day 1, Date 26.03.2018

13.3.10 Josephson effect

Week 13, day 2, Date 27.03.2018

13.3.11 Practical applications of superconductivity and limitations

13.3.12 Power application of superconductors

Week 13, day 3, Date 28.03.2018

Inviting queries and doubts on Unit-3

Week 14

Unit 3: Super Conductivity

Week 14, day 1, Date 02.04.2018

Test based on Unit-3

Unit 4: Introduction to Nano Physics

Week 14, day 2, Date 03.04.2018

14.4.1 Definition of nanotechnology

14.4.2 Length scale

Week 14, day 3, Date 04.04.2018

14.4.3 Importance of Nano-scale and technology

Week 15

Unit 4: Introduction to Nano Physics

Week 15, day 1, Date 09.04.2018

15.4.4 Benefits and challenges in molecular manufacturing

Week 15, day 2, Date 10.04.2018

15.4.5 Molecular assembler concept

Week 15, day 3, Date 11.04.2018

15.4.6 Understanding the advanced capabilities

15.4.7 Vision and objective of Nano-technology

Week 16

Unit 4: Introduction to Nano Physics

Week 16, day 1, Date 16.04.2018

16.4.8 Nano-technology in different fields

Week 16, day 2, Date 17.04.2018

Inviting queries and doubts on Unit-4

Week 16, day 3, Date 18.04.2018

Parshuram Jayanti

Week 17

Week 17, day 1, Date 23.04.2018

Inviting doubts for all four units

Week 17, day 2, Date 24.04.2018

Session test

Week 17, day 3, Date 25.04.2018

Revision and inviting doubts

Week 18

Week 18, day 1, Date 30.04.2018

Even Semesters Examination Begins