

Dr. BhimRao Ambedkar Govt. College Jagdishpura (Kaithal)

Lesson Plan: (from 08 January, 2024 to 30 April, 2024)

Name of Assistant Professor: Dr. Neelam

Class and Section: BSc III (NM+CS) Subject: Physics- PH-601- SOLID STATE AND NANO PHYSICS

Dates	Lesson Plan
WEEK -2 JANUARY	INTRODUCTION OF PAPER PH-601 Unit I: CRYSTAL STRUCTURE: Crystalline and glassy forms, liquid crystals
WEEK-3 JANUARY	Crystal structure, periodicity, lattice and basis, crystal translational vectors and axes.
WEEK-4 JANUARY	Unit cell and Primitive Cell, Winger Seitz primitive Cell, symmetry operations for a two dimensional crystal
WEEK-5 JANUARY	Bravais lattices in two and three dimensions. Crystal planes and Miller indices, Interplaner spacing,
WEEK-1 FEBRUARY	Crystal structures of Zinc Sulphide, Sodium Chloride and Diamond.
WEEK-2 FEBRUARY	Unit II: CRYSTAL STRUCTURE II: X-ray diffraction, Bragg's Law and experimental
WEEK -3 FEBRUARY	X-ray diffraction methods, K-space and reciprocal lattice and its physical significance.
WEEK-4 FEBRUARY	Reciprocal lattice vectors, reciprocal lattice to a simple cubic lattice, b.c.c. and f.c.c.
WEEK 1 MARCH	Unit III: SUPERCONDUCTIVITY : Historical introduction, Survey of superconductivity, Super conducting systems, High Tc Super conductors, Isotopic Effect, Critical Magnetic Field, Meissner Effect.
WEEK-2 MARCH	London Theory and Pippards' equation, Classification of Superconductors (type I and Type II), BCS Theory of Superconductivity.
WEEK-3 MARCH	Flux quantization, Josephson Effect (AC and DC), Practical Applications of superconductivity and their limitations, power application of superconductors.
WEEK -4 MARCH	23 MARCH- 31 MARCH 2024 –HOLI VACATIONS

WEEK-1 APRIL	Unit IV: INTRODUCTION TO NANO PHYSICS: Definition, Length scale, Importance of Nano-scale and technology, History of Nantechnology.
WEEK-2 APRIL	Benefits and challenges in molecular manufacturing. Molecular assembler concept, Understanding advanced capabilities.
WEEK-3 APRIL	Vision and objective of Nano-technology, Nanotechnology in different field, Automobile, Electronics, Nano-biotechnology, Materials, Medicine.
WEEK -4 APRIL	REVISION
01 MAY 2024	EXAM ONWARD



Dr. Neelam
Assistant Professor Physics
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