

Physics Department

B.Sc. (V<sup>th</sup>) 8em

Subject - Solid State Physics

Name of Lect. - Mrs. Sapana Kumari

MONTH - JULY [TOPICS COVERED]

Crystal Structure - I.

- Crystalline and amorphous forms
- Liquid Crystals.
- Crystal Structure & periodicity.

MONTH - AUGUST

- Lattice and basis crystal Translational vectors and  $a_1$
- Unit cell and primitive cell, Wigner Seitz primitive cell
- Symmetry operation for a two dimensional crystal.
- Bravais lattice in two dimension & three dim.
- Test stand Problem solving.

MONTH - September

- Crystal planes and Miller indices, interplanar space
- Crystal structure of Zinc sulphide, NaCl & diamond
- X-ray diffraction, Bragg's law
- Experimental x-ray diffraction methods, K-space
- Test 2<sup>nd</sup> Group discussion.

MONTH - October

- Reciprocal lattice and its Physical significance.
- Reciprocal lattice vectors,
- Reciprocal lattice to a simple cubic, b.c.c. & f.c.c.
- Specific heat: Specific heat of solids.
- Problem solving

MONTH - NOVEMBER

- Einstein's theory of specific heat.
- Debye model of specific heat of solids.
- Test 3<sup>rd</sup> and discussion.

Sapana Kumari