

Roll.No.

20UPHCT6013

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

B.Sc.Physics - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - VI

20UPHCT6013 - Solid State Physics

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the face centered cubic structure.
2. Describe the Rotating Crystal Method of X-ray diffraction.
3. Explain the Weiss theory of paramagnetism.
4. Mention the application of dielectric materials.
5. State and explain Meissner effect in superconductors.
6. Define Crystal lattice and primitive cell.
7. Relate and compare para and dia magnetic materials.
8. Differentiate between Type I and Type II superconductor.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Explain the seven classes of crystals with neat diagram.
10. Write a note on
 - a) Bragg's Law for X-ray Diffraction by crystals.
 - b) Concept of reciprocal lattice
11. Explain the Langevin's theory of diamagnetism.
12. Compute an expression for the internal field and deduce Clausius-Mossotti relation.
13. Explain the BCS theory of superconductivity.
