

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 - APRIL 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 briefly the crystal structure of Zinc blende.
2. Differentiate the properties of dia, para, and ferro magnetic materials.
3. Illustrate the different types of polarization with suitable diagrams.
4. Explain Meissner effect in superconductors.
5. Explain Bragg's Law in one-dimension.
6. Explain Weiss theory of para magnetism.
7. Describe the Schering Bridge method of determination of dielectric constant and dipole moment of a dielectric material.
8. Distinguish between type I and type II superconductor.

Section C

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

9. Describe the 14 types of Bravais lattices in three dimensions with suitable diagrams.
10. Determine the structure of the water molecule, including bond length, bond angle, hydrogen bonds, and Van der Waals radii.
11. Explain classical theory of Diamagnetism.
12. Deduce Clausius-Mosotti relation and explain its use in predicting the dielectric constant of solids.
13. Narrate the applications of superconductors.
