

Roll.No.

24PPHET3B03

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.

M.Sc.Physics - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - III

24PPHET3B03 - Crystal Structure and Properties of Metals

Total Duration : 1 Hrs.30 Mins.

Total Marks : 40

Section B

Answer any **TEN** questions ($10 \times 2 = 20$ Marks)

1. Define crystallographic planes.
2. What is planar density explain with example.
3. Show planar packing factor and explain with example.
4. List out the different kinds of material failures.
5. Define tensile strength.
6. Explain plastic deformation in solids.
7. What are miller indices?
8. Define the list of brackets that u to indicates for individual planes.
9. Describe screw dislocation
10. What is burger's vector?
11. What is edge dislocation?
12. Explain elastic deformation.

Section C

Answer any **FOUR** questions ($4 \times 5 = 20$ Marks)

13. Illustrate crystallographic planes and their types in detail.
14. Compute the deformation mechanism in the slip system.
15. Differentiate between substitutional and interstitial point defects.
16. Explain planar density and packing factor for SC, BCC, and FCC structures.
17. Examine the stress-strain curve and its mechanism in detail.
18. Classify bonding in solids.
