

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 - APRIL 2025

SEMESTER - IV

**24PPHET4B05 - Introduction To Materials Science**

Total Duration : 1 Hrs.30 Mins.

Total Marks : 40

### Section B

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

1. Give three characteristics of polymers.
2. Explain how do materials advance civilization.
3. What are the types of atomic bonding ? Give examples.
4. Explain primary and secondary bonding.
5. What is coefficient of thermal expansion?
6. Explain how material's is stiffness measured?
7. What is crystal lattice and lattice parameters?
8. What are the seven types or crystal system and write the bravais lattice points?
9. Define amorphous structure and give examples.
10. What is polycrystalline microstructure?
11. Explain the bonding energy for ceramics.
12. Define crystal structure. Give examples.

### Section C

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

13. Explain the bravais lattice for seven crystal systems.
14. Classify single crystal and poly crystalline metals.
15. Associate the significance of atomic bonding in material science.
16. Describe the properties of crystal and amorphous structure.
17. Examine the effect of bonding on temperature of processing.
18. Classify the characteristics of metals, polymers and ceramics.

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