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 - NOV'2024
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 unit cell.

2. Define Bravais lattices.

3. Explain miller indices.

4. What is atomic packing factor?

5. Give any two applications of X-ray diffraction.

6. How do we use tensile test?

7. What is crystal defect? State its types.

8. Define substitutional atoms.

9. How many numbers of atoms present in FCC, BCC, SCC?

10. Define interstitial atoms.

11. Define elastic modulus.

12. Show the effect of temperature on vacancy concentration.

Section C

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

13. Explain properties of metal with stress and strain curve.

14. Examine elastic deformation with modulus of elasticity E.

15. Compute an account on Bragg's law in one dimension.

16. Explain the construction of X-ray diffractometer.

17. Associate the following terms:
    a) Bond length   b) Bond order   c) Bond energy   d) Electronegativity

18. Compute an account on X-ray diffraction (XRD) with its principle and working.

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