SNS COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)

SNS Kalvi Nagar,Saravanampatti Post

Coimbatore - 641 035

Approved by AICTE, New Delhi &Affiliated to Anna University, Chennai

Accredited by NBA & accredited by NAAC with 'A++' Grade, Recognized byUGC

7

Characteristics of a unit cell:

1. No. of atoms per unit cell : It represents no. of atoms present inside the unit cell.

2. coordination number: The distance no. of nearest atoms directly surrounding a particular atom in a crystal.

CN (high) → closely packed

CN (low) → losely packed.

3. Nearest neighbouring distance (2r)

The distance b/w the centre of two nearest neighbouring atom. (a)

4. Atomic radius :
half of the nearest neighbouring distance in a crystal.

$$-a = 2r \implies r = a/2$$

5. Packing factor (P.F)

P.F: $\dfrac{\text{Total volume occupied by the atom in a unit cell } (v)}{\text{Total Volume of the unit cell. } (V)}$

$= \dfrac{\text{No of atom present in a unit cell} \times \text{Volume of one atom}}{\text{Total volume of the unit cell.}}$

P.F: (high) → Closely packed. PF (low) → losely packed.