



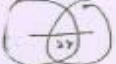
# SNS COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)  
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Characteristics of a unit cell:

- No. of atoms per unit cell: It represents no. of atoms present inside the unit cell.
- Coordination number: The distance b/w no. of nearest atoms directly surrounding a particular atom in a crystal.  
CN (high)  $\rightarrow$  closely packed  
CN (low)  $\rightarrow$  loosely packed.
- Nearest neighbouring distance ( $a_n$ ):  
The distance b/w the centre of two nearest neighbouring atoms. ( $a_n$ )  

- Atomic radius:  
half of the nearest neighbouring distance in a crystal.  
 $a = 2r \Rightarrow r = a/2$
- Packing factor (PF)  
$$PF = \frac{\text{Total volume occupied by the atoms in a unit cell (V)}}{\text{Total volume of the unit cell (V)}}$$
$$= \frac{\text{No. of atoms present in a unit cell} \times \text{Volume of one atom}}{\text{Total volume of the unit cell}}$$
  
PF: (high)  $\rightarrow$  closely packed, PF (low)  $\rightarrow$  loosely packed.

