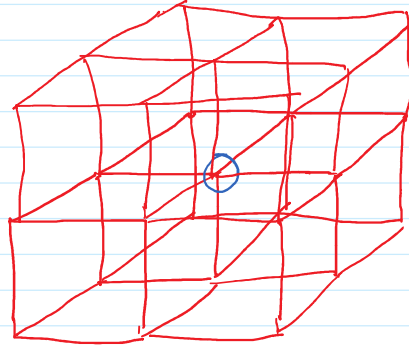
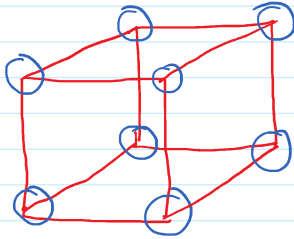


Question

Explain how much portion of an atom located at (i) corner and (ii) body centre of a cubic unit cell is part of the unit cell.

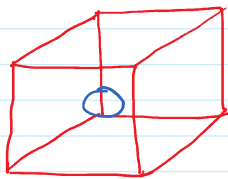
Answer:

i)



$1/8^{\text{th}}$  of an atom present at corner is located in unit cell

ii)



Atom present at body centre is completely present inside the unit cell, thus its contribution towards unit cell is 1.

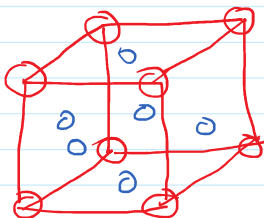
Question

How many lattice points are there in one unit cell of each of the following lattice?

- i) Face-centred cubic
- ii) Face-centred tetragonal
- iii) Body-centered cubic

Answer:

i)

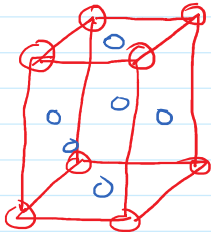


Face centred cubic unit cell has 14 lattice points (8 from corners + 6 from face centres)



... centres )

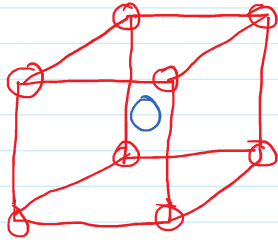
ii)



face centred tetragonal unit cell has 14 lattice points (8 from corners + 6 from face centres)

iii)

Body centred cubic



Body centered cubic unit cell has 9 lattice points (8 from corners + 1 from body centre).