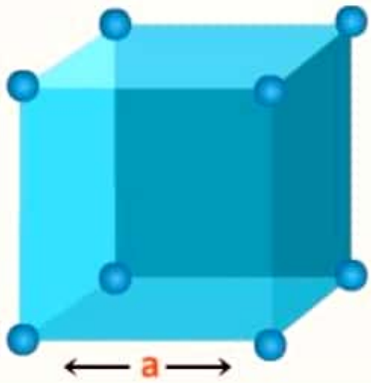
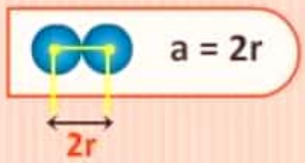
Bravais Lattices Of Crystals

Primitive Cube

- 8 - Corner atoms = $8 \times \frac{1}{8} = 1$

Total Number of atoms = 1





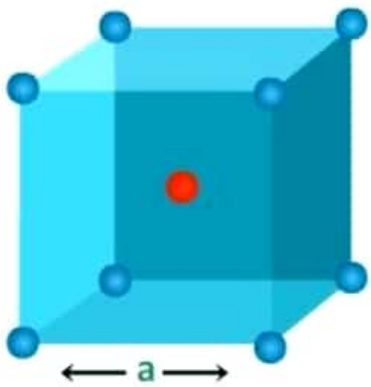
Packing Fraction = $\frac{\text{Volume of atoms}}{\text{Volume of cube}}$

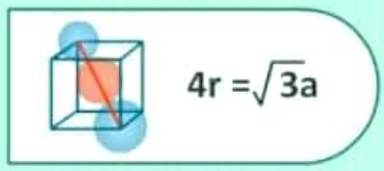
= 0.52

Body Centered Cube

- 8 - Corner atoms = $8 \times \frac{1}{8} = 1$
- Center atoms = 1

Total Number of atoms = 2





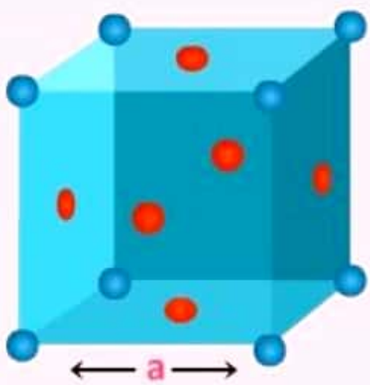
Packing Fraction = $\frac{\text{Volume of atoms}}{\text{Volume of cube}}$

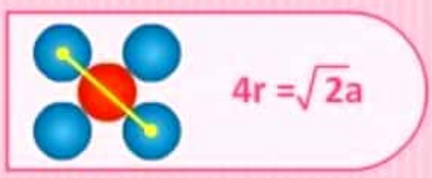
= 0.68

Face Centered Cube

- 8 - Corner atoms = $8 \times \frac{1}{8} = 1$
- 6 - Face atoms = $6 \times \frac{1}{2} = 3$

Total Number of atoms = 4





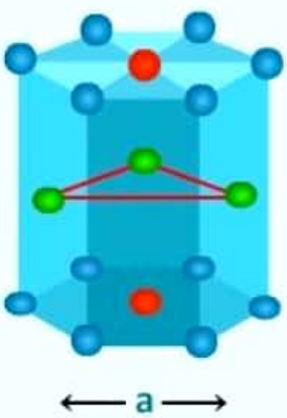
Packing Fraction = $\frac{\text{Volume of atoms}}{\text{Volume of cube}}$

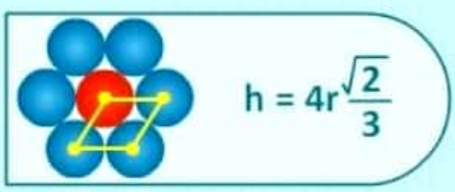
= 0.74

Hexagonal Close Packed

- 12 - Side corner = $12 \times \frac{1}{6} = 2$
- 2 - Face side atoms = $2 \times \frac{1}{2} = 1$
- 3 - atoms inside $3 \times 1 = 3$

Total Number of atoms = 6





Packing Fraction = $\frac{\text{Volume of atoms}}{\text{Volume of hexagonal}}$

= 0.74