**Dr.Manoj Kumar**

**Associate professor**

**Department of Chemistry**

**Raja Singh College,Siwan**

**Structure of NaCl**

Ans: The structure of NaCl may be represented as below.

It has face centred cubic lattice. Na+  are present at the corrner’s and face centred while Cl- are present at body centre and edge centre . The structure of sodium chloride we shall find that there are 4 units of sodium and chloride ion each in a unit cell.This structure has co-ordination number 6.

**Crystal Structure of CsCl**

The CsCl crystallizes as body centered cubic lattice ,the co-ordination number of Cs+ and Cl- ions is eight.The radius ratio 0.92 also justify it.The number of atom at corner is eight and the co-ordination number is also eight.The central atom is not shared by any atom,hence the effective number of atom per unit cell is 8/8 +1=1+1=2 .The Cs+ ion is sufficiently large enough to to allow eight Cl- ions to surround it without touching each other and v.v.It is neither close packed arrangement not strictly b.c.c.In a b.c.c arrangement points at the centre and those at corners are identical whereas in this case they have different radii.The unit cell of cerium chloride is shown in fig.

 **Zinc blenda [ZnS]**

The structure of Zinc Blende. Zinc Blende is the name given to the mineral ZnS. It has a cubic close packed (face centred) array of S and the Zn(II) sit in tetrahedral (1/2 occupied) sites in the lattice, giving a Unit Cell with 8 Zn and 16 S's.



**Structure of Antifluorite**

Na2O each oxide ion is surrounded by eight sodium ions and each sodium ion by four oxide ions.It has 4:8 co-ordination.