

UNIT 4

CHEMICAL BONDING AND MOLECULAR STRUCTURE

- The attractive force which holds atoms anions together in different chemical species is called “Chemical bond”.
- To answer why and how atoms combine together to form molecules, various theories have been proposed.

Kossel – Lewi’s approach:

Kossel & Lew’s separately and independently given satisfactory explanation based on valency.

According to Lewis,

- The nucleus and inner (core) electrons together is known as metal “Kernel”.
- He postulated that atoms achieve stable octet when they are linked by chemical bonds.
- Information of molecule only valance electrons participate.
- He used simple notations called “Lewis symbols”.

Ex. C – has 6 electrons

$1s^2 2s^2 2p^2$ is electrons are core electrons

Electrons of 2^{nd} shell are valance electrons. Hence it is represented as



The no of dots around the symbol represents no of valence electrons.

Octet Rule:

According to this rule, atoms can combine either by transfer (lose or gain) of electrons (or) by sharing of valence electrons to have octet in their valence shell.

- Using Lewi's dot structure water molecule can be represented as below,

