

### Question:

Why do atoms form bonds?  
Name three major types of chemical bonds?

### Answer:-

#### 1. Chemical Bonds:-

The force of attraction between two atoms to make molecules.

#### 2. Why do atoms form bonds:

Atoms formed bond to make their electronic configuration similar to the Noble gases which are more stable than any other atoms. According to Octate rule every atom needs eight electrons in their outer most shell and for this reason they may share, donate or accept the electrons from the other atoms.

#### 3. Types of Chemical Bonds:-

There are different types of chemical bonds between the atoms

such as

(i) Ionic bond

(ii) Covalent bond

(iii) Coordinate covalent bond

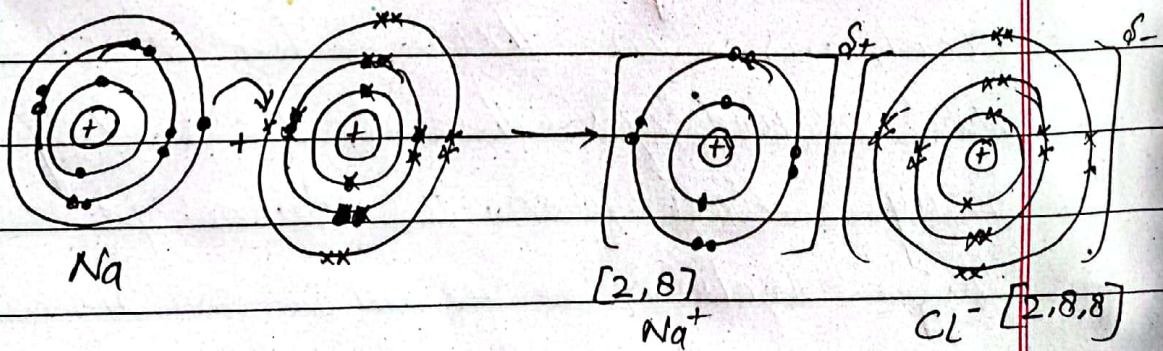
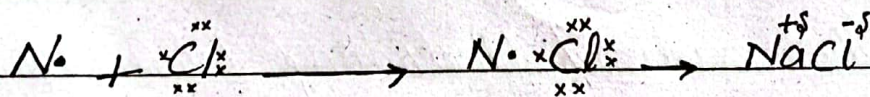
(iv) Metallic bond

(v) Hydrogen bond

(i) Ionic Bond:-

It is the type of chemical bonds in which one atom gives one electron through its outer most shell and the other atom accept this electron becoming a negative charged ion.

For Example:-



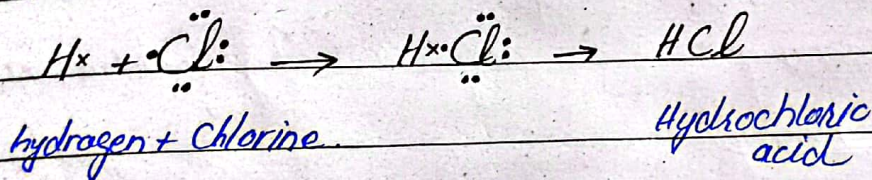
→ Sodium after losing one electron will attain the electronic configuration like Neon  $[2,8]$  the noble gas.

→ Chloride ion after accepting electron will attain the electronic configuration similar to Argon (2,8,8).

### (ii) Covalent Bond:-

The type of chemical bond in which atoms share their electron from outer shell to attain the electronic configuration similar to the nearest noble gas.

For example.



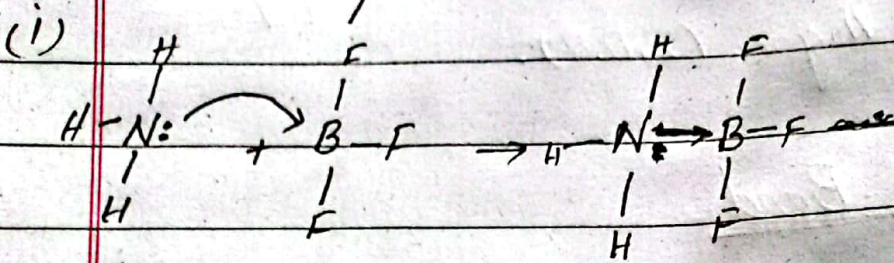
The covalent bond is denoted by a line.

### (iii) Coordinate Covalent bond:-

The type of chemical bond in which one atom that has lone pair on it will donate it to the other atom and make a bond that is called coordinate covalent bond. It is denoted by an

arrow pointing from donor to acceptor.

For example:



Amonia

