

1785 :- A.L. Lavoisier $\xrightarrow{\text{organic}}$
 $\xrightarrow{\text{Inorganic}}$

Bio-chemistry 1800 - Berzellius - Vital force

Deals with the study of chemical present in the biological system and its function.

Wohler - 1828 - Vital force theory

Cell is the structural and functional unit of life

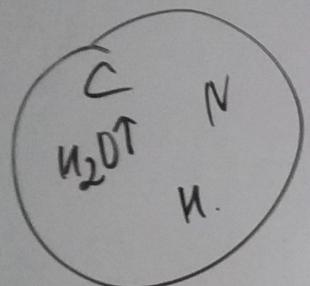
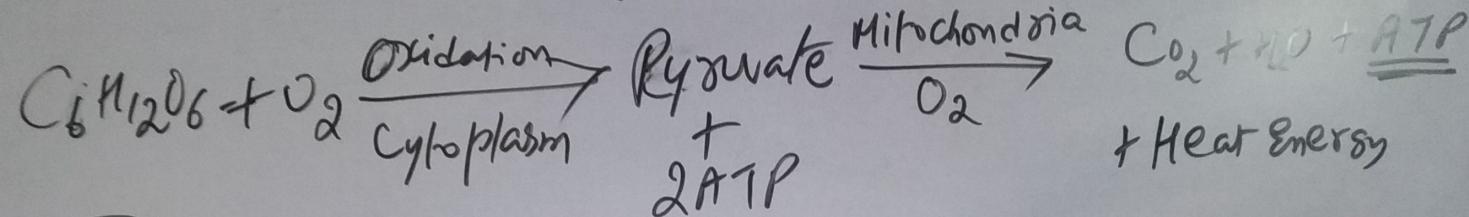
Cell + cell \longrightarrow Tissue + Tissue \longrightarrow Organ + Organ \rightarrow Organ system
↓
Cell \leftarrow Cytoplasm
Cell \leftarrow Nucleus
Cell \leftarrow CM

C = C Organism

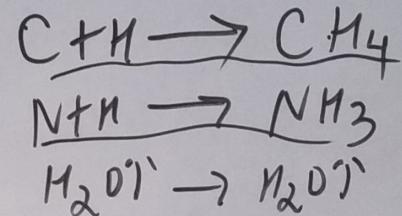
Atoms + Atoms \longrightarrow Elements + Element \longrightarrow molecule + molecule
C + C \longrightarrow C - C \downarrow
Compound

C + O + H \longrightarrow carbohydrate, protein, fat
C + H \longrightarrow organic compound - Hydrocarbon

Primitive Earth was a ball of fire



Temp. cool



Glycine, Alanine

Cell

Adenine

Bonds

Strong bond

Weak bond

Hydrophobic bond

Vanderwaal's force

Ionic bond

Covalent bond

Coordinate bond

Metallic bond

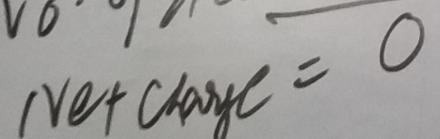
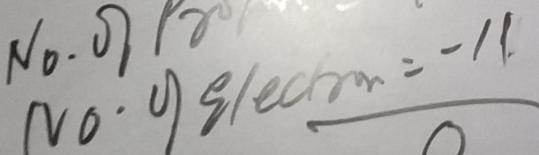
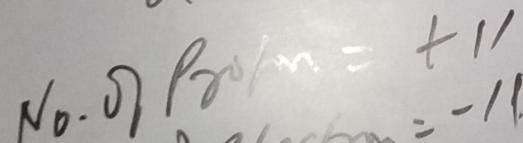
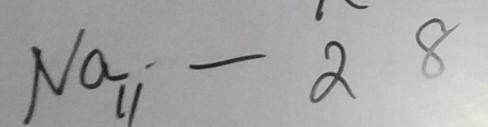
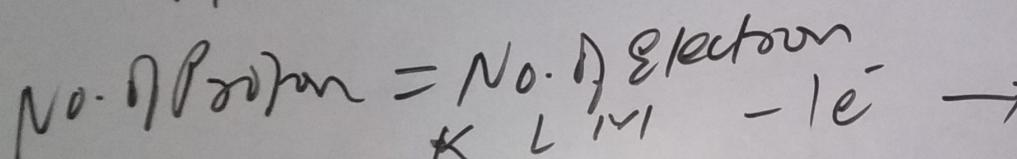
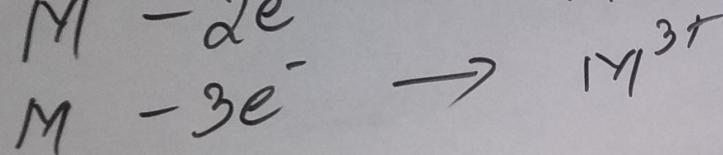
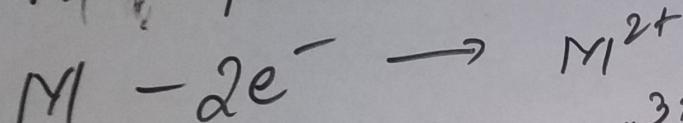
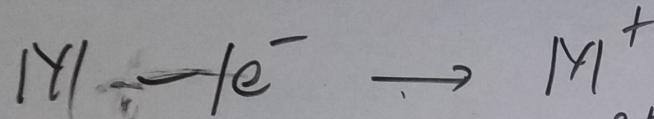
Hydrogen bond

Disulfide bond

Ionic bond :- Metal — Non-metal

Met + Metal - Electropositive element

which lose electron to fulfill its duplet/ octet



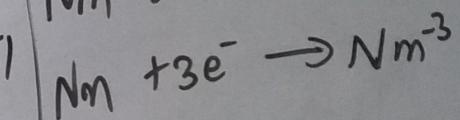
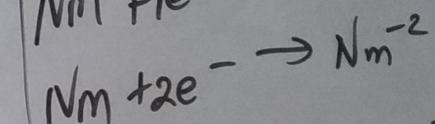
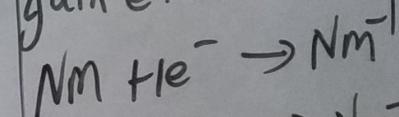
Process of loss of electron - Oxidation

NaCl

Electron Negative

Element - Nonmetal

gain electron



Gain of electron -

Na⁺

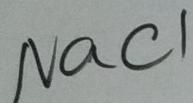
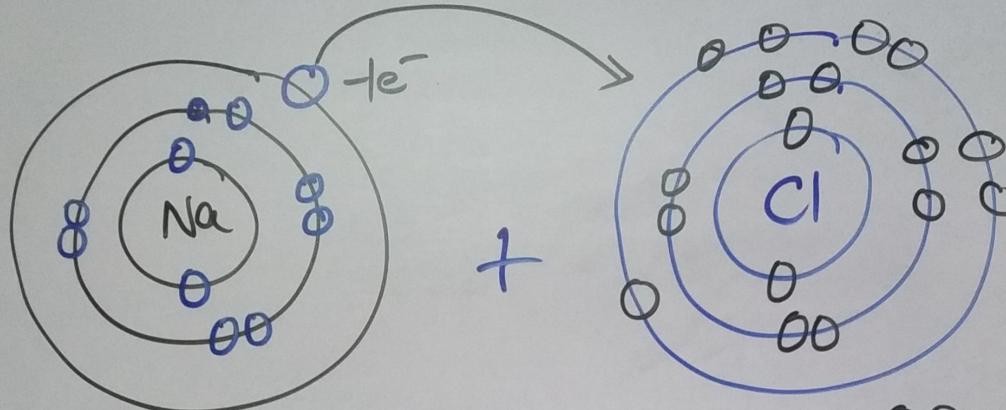
K M
2 8

No. of Proton = +1

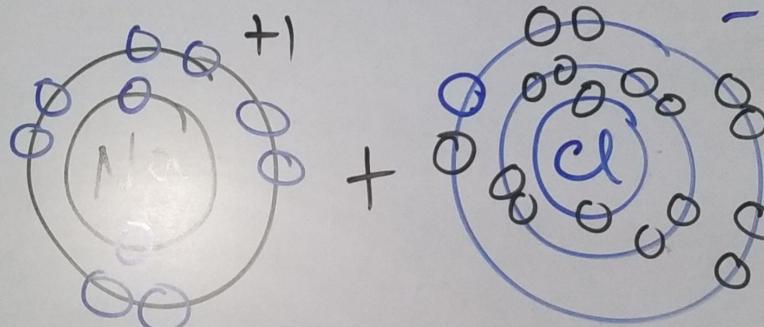
No. of Electron = -1

Net charge +1

Reduction


$$\text{Na}_{11} - 2, 8, 1$$
$$\text{Cl}_{17} - 2, 8, 7$$


$$E = \frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r^2}$$

$$-1$$

$$\text{No. of electrons - E.C.}$$

$$2n^2$$

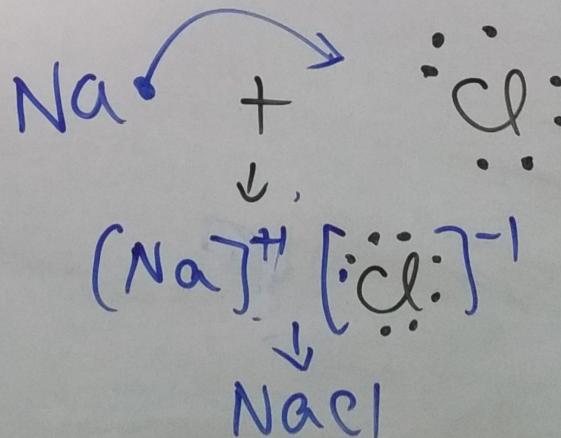
$$\text{where } n = \text{No. of shell}$$

$$K - 1 - 2 \times 1^2 = 2 \times 1 = 2$$

$$L - 2 - 2 \times 2^2 = 2 \times 4 = 8$$

$$M - 3 - 2 \times 3^2 = 2 \times 9 = 18$$

$$N - 4 - 2 \times 4^2 = 2 \times 16 = 32$$



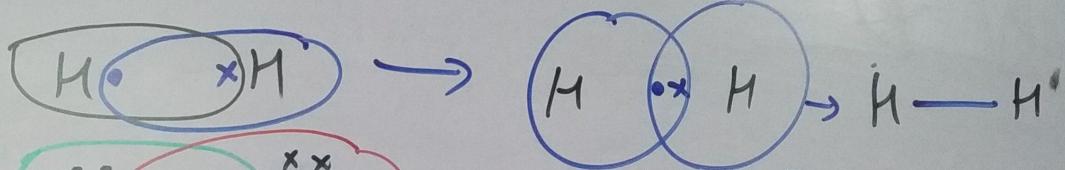
Covalent bond :- Bond between two non-metal or electronegative element.

H
1H

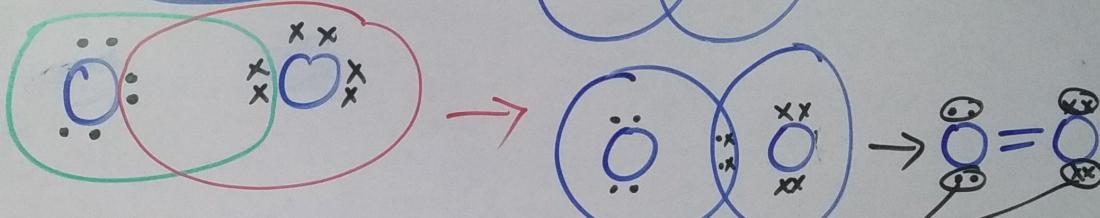
H
17
He

Sharing of electron to fulfill its duplet or octet.

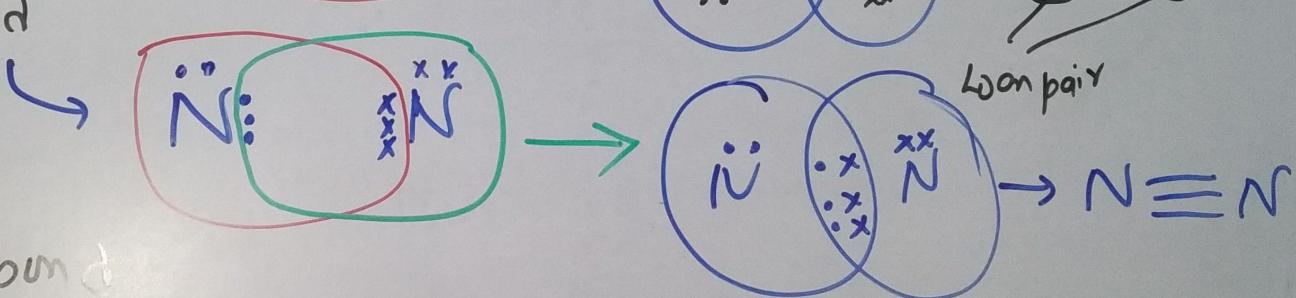
Single bond



Double bond



Triple bond



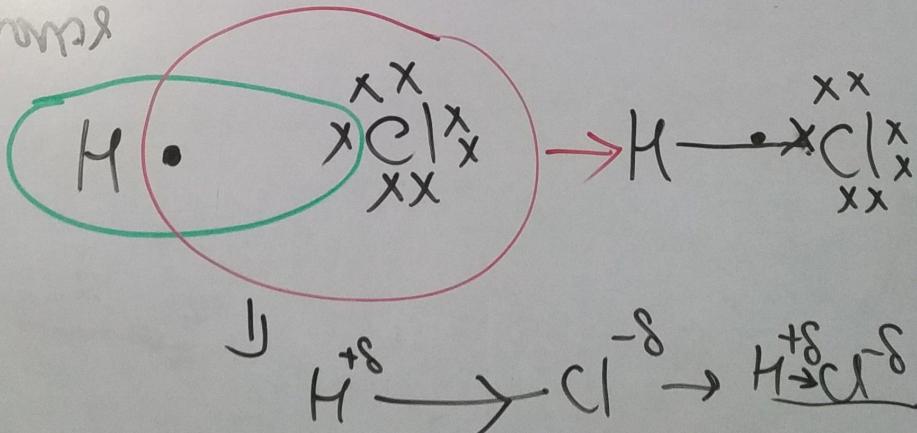
Polar covalent bond

Dissimilar atoms

HCl

H₂O

NH₃



11