৪. মানুষেরা কি এটা মনে করে নিয়েছে যে, তাদের এটুকু বলার কারণেই ছেড়ে দেয়া হবে যে, আমরা ঈমান এনেছি এবং তাদের কোনো রকম পরীক্ষা করা হবে না।

আমি তো সে সব লোকদেরও পরীক্ষা করেছি, যারা এদের আগে ছিলো, আল্লাহ তায়ালা অবশ্যই তাদের ভালো করে জেনে নেবেন যারা সত্যবাদী, মিথ্যাদাবীদারদেরও তিনি নিঃসন্দেহে জেনে নেবেন।

—আনকাবুত ঃ ২-৩

Do people think that they will be left alone because they say: "We believe," and will not be tested?

And I indeed tested those who were before them. And Allah will certainly make (it) known (the truth of) those who are true, and will certainly make (it) known (the falsehood of) those who are liars.

Chemical bond: A chemical bond is defined as a force that acts between two or more atoms to hold them together as a stable molecule.

OR

The bond or attractive force between two atoms or molecules or ions which hold them together is called chemical bond.

There are many kinds of chemical bond. such as-

I) Ionic or Electrovalent bond
II) Covalent bond
III) Coordinate covalent bond
IV) Hydrogen bond
V) metalic bond
VI) Polar coordinate bond

Valance: valance is the number of bonds formed by an atom in a molecule. or,
Valancy: valancy is the capacity of an element to combin another ele.

Electronic Theory of Valance: In chemical bond formation, atoms interact by losing, gaining or sharing of electrons so as to acquire a stable noble gas configuration.

such as-

He → $1s^2$
Ne → $1s^2 2s^2 2p^6$
Ar → $1s^2 2s^2 2p^6 3s^2 3p^6$

while atoms of noble gases possess a stable outer shell of eight electrons or octet, atoms of most other elements have incomplete octets. They may have less than 8 electrons or in excess. Thus, the electronic theory of valance could will be named as Octet theory of Valance.

The tendency for atoms to have eight electrons in the outer shell is knownas Octet Rule or the Rule of Eight.

* Ionic or Electrovalent bond

The ionic or electrovalent bond is formed when one or more electrons have been transferred from one atom to complete the orbitals of another atom. Elements which have a tendency to loose one or more electrons are called electropositive while those having a tendency to gain electrons are called electronegative

Kossel pointed out the facts that when atoms of electropositive and electronegative elements combine together, one or more electrons are transferred from the former to latter and the atoms are converted into cations and anions. As a result of mutual electrostatic attraction between the ions so formed, an ionic of electrovalent bond is established

Example: $Na \cdot + \cdot\ddot{Cl}: \longrightarrow Na^+ [:\ddot{Cl}:]^-$ or Na^+Cl^-

* The por properties of ionic compound

Electropositive element + Electronegative elephant

Ionisation Energy: Ionisation energy is the amount of energy required to remove the most lossly bound electron from an isolated gases.

Electron Affinity: The amount of energy relased to add an electron in an isolated gaseous atom and form a negative ion or anion, is called electron affects or affinity.

Lattice Energy: Lattice Energy is defined as the amount of energy released when one mole of an ionic compound is formed from its cations and anions.

Conditions for the formation of ionic bond.

I) Atom C gives up an electron by absorbing energy and is converted into cations

$$C + \text{Absorbed [IP]} \longrightarrow C^+ + e^-$$

II) A picks up electron releseing energy and converted into anion.

$$A + e^- \longrightarrow A^- + \text{released (EA)}$$

III) Catoion and anion combine together to give ionic crystal C^+A^- with energy released.

$$C^+ + A^- \longrightarrow C^+A^- + \text{Energy released}$$

Heat of formation is equal to $-\frac{e^2}{(r_{C^+} + r_{A^-})}$

The overall energy change

$\therefore E_{ionic} = (IP)_C - (EA)_A - \frac{e^2}{r_{C^+} + r_{A^-}}$

Here e is ionic charge on C^+ and A^- and r_+ and r_- ionic radii

For stable compound, we get

a) $\frac{e^2}{r_{C^+} + r_{A^-}} > (IP)_C - (EA)_A$

b) $(IP)_C - (E_A)_A$ should be negative

I) The ionisation potential of metal should be low

II) The electron affinity of the non-metal should be high

III) The lattice energy of the compound formed should be high.