03-11-24: tolderated of roll chemical bond:

A -> Force of attraction - B

Between two orc morce atoms which holds them together and form stable molecules, compounts org ions. 3+ (p) +M

Types of Bond: . Toitastid pinot

- (i) Electovalent bond/ Ionic bond r
- in co-valent bond story moitoring evisassus
- iii) Co-oradinate co-valent bond.
- iv) Metalic bond.
- (v) H-bond

1, -> M(g) + E-

to bloo of bososlave sparars to truome all

Electora -:

(i) How to forcm electro-positive and electronegative - SENTS WE bond? Electron Affinity

Amon is colled Electron Affinity.

Ionic Potential

The amount of energy required to remove the most loosely bound electron from an isolated gasus mote of atom is called Ionic Potential form stable more bore orestaged

$$M(s) + I \longrightarrow M^{+}(g) + e^{-state}$$

Ionia Pottential.

theetovalent borad Ignic bond + Successive Jonization potential:

Electricon reemoves one by one. Not morce than one at a time.

-borred-H (v

$$M(g) + I_1 \rightarrow M(g) + e^-$$

$$M(g)^{\dagger} + I_2 \rightarrow M(g)$$

$$I_n > I_{n-1} > \cdots > I_2 > I_1$$

$$I_n > I_{n-1} > \cdots > I_2 > I_1$$

Electroon Affinity

The amount of energy released to add an electricon to an isolated gases atom and fon Anion is called Electroon Affinity.

How to force electrico

Conditions force forcemation of ionic bond: is Defensionation of equilibrium

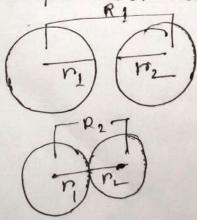
$$C+I \rightarrow C^+$$

 $a+e \rightarrow a^{-}+(-A)$ $c^{+}+a^{-}\rightarrow c^{+}a^{-}+(-V_{o}) \longrightarrow creyetal \ energy$

Hit is not negative, foremation of creystal

is not possible. Exception: NaI.

- * Enercyetics of Ionic bond forcmation:
 - in Fortmation of Ions.
 - ii) Ion's paire foremation.



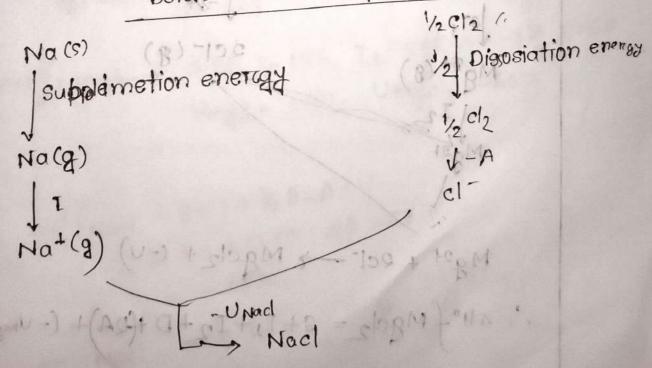
R1>1,412 R2=1,+12 (iii) gon's squarce: The morce is the number of ion's squarce, the morce stable is the stability of the compound.

(iv) lattice or croystal enercy:
The enercy recoleased while forcing a croy

stal is called a croystal energy.

To be specific, 1 gm-mole of electropositive ion reacts with 1 of electromegative ion and forems 1 gm-mole of creystal, is then the reealeased enercy will be croystal enercy.

Boran-Habbers cycle por gm



Kato

The morce the negativity, the morce the stability. stability. State latered to bellow Macl-

* Mgcl2 is morce stable than Mgcl -> Prove it using Boron-Habbert cycle. sitisses ad of

.. AHO- Macl2 = S+ I1+ I2+ D+(2A)+ (-Umgel2)

$$\Delta H^{\circ} \int M Nod \Rightarrow S = 26.0, J = 118.0, D = 58.0, -A = -87.0$$

$$\Delta H^{\circ} \int M Nod \Rightarrow S = 26.0, J = 118.0, D = 58.0, -A = -87.0$$

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.. AH° f Nacl =
$$98 + 1 + \frac{1}{2}D - A - U$$

= $26 + 118 + \frac{58}{2} - 87 - 184$
= -98 Kcal
= -98 Kcal
AH° f Mgel = $35 + 176 + \frac{1}{2} \times 58 - 87 - 171$

$$\frac{3+1}{1} + \frac{1}{1} + \frac{$$

Charcactercestics of ionic compound

(1) Solid at room tempercaturce. Because of the

(ii) strang electrostatic force of the ions and

(ii) Melting point is high. Because, demand higher amount of energy forc ficee movement of the ions.

(iii) Harad and Braittle tomitte

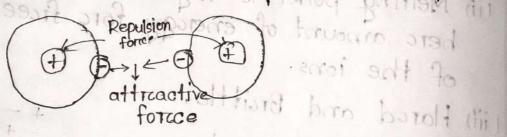
Fig: Broit tleness. . . a falour

(iv) soluble in H20:

(v) Poorc conductivity in solid state.
(vi) Don't exhibit isomercism. As they arce reigidet and hence non-directional, they don't show isomercism.

(vii Moleculars ree-action is slow.

born and add accordent Bond to bilos on How to creeate sharcing electron pain?



14 Asin (10)

Two positive nuclei has a force of attraction between two electrons but at the same time, there is a reepulsion force between the nucleis, When the attraction force is highen. (iv) soluble in Hac.

conditions forc co-valent bond:

- in Numbers of valence electrons. That means the compounds must follow-fullfill the octet roule.
- (ii) Equal electronegativity.

 (iii) Equal sharcings of electrons.

Polarc co-valent Bond

Polarc co-valent bond is foremend when two compound has unequal electronegativity. As a result, the sharced electrons feel a higher attraction to the morce electronegative atom.

A co-valent bond, in which electrons are sharced unequally and the bonded atoms acquirce a parctial positive and negative charage is called polars covalent bond.

* Comparce the properrities of @ Covalent and ionic bond. Charcactercestics of covalent bond !-1. Liquid, gaseous. 2. Low boiling point, melting point

3. Neither hard now breitle de partie

1. Reaction reate slow moisson losingle

5. Maintains isomercism

.coordinate covalent Bond

Sharcing electricon pair comes from one of the atoms.

Atoms sharting electricon paires are called legands!

Ligands _____ monodentic → bidentic

$$0 = 0 \longrightarrow 0$$

Hydrozen bond toolovoo stil (a)

When H is covalently bonded to highly electronegative atom x (O,N,F), The sharing electron (lone pairs) is pulled close to x, which has a strong dipole result, you as the

L. Electrostatic attraction.

Hot attracts with another that the state of another atom x of another compound and its lone pairs electron tomm Homes - bond?

when (i) It is foremed fore the atom's size is small conditions: and electronegativity is high.

It is weakers the longers but much weaken than that of northal co-valent bond.

(iii) H-bond results in long chain of la number of molecules like a ting magnet.

(iv) like covalent bond, H-bond has a præ. fferced bonding direction.

Types of H-bond.

i) Intra molecular & bond & Bo or tho-Phenol, ii, Inter molecular H-bond: 100 18

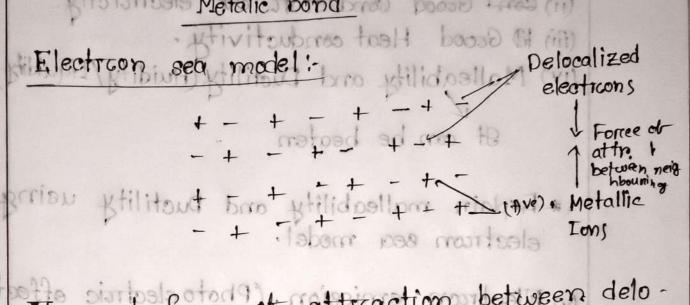
highly eleatricongative Example of Intra molecular H-bond;

(ii) It is weakers the longers but much weakers

than that of normal co-valent bond.

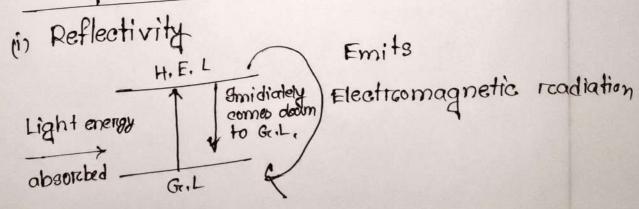
oratho nitro oratho - Benzoie phenos n phenoloid si utivitapecrostionele boro

(ii) cond Good cond bond collectici city



The meta force of attraction between delocalized electrons and neighbourcing Metalic ions is called metalic bond.

* Explain the physical prooperaties of metal using electrion sea model.



(ii) cont Good conductors of electricity: (iii) 10 Good Heat conductivity. (iv) Malleability and Ductility (Fluidity/Liquidity). It can be beaten * Explain malleability and Ductility using electron sea model. M Electricon emission. (Photoelectric effect) ealized electrons and neighbouring Metalic ions is colled metalic bond. * Exploirs the physical preoperaties of metal using electrons sea model. in Reflectivity Light a regy to Got, to Got, described 5.1.