* Attractive force :- Electrons are attracted by atomic neculli as are the neculi by the electrons because of their opposite charge and hence tend to occupie the reason b/w two neculei opposite. Spine permits to electrons to occupie the same regions

* Bond dissociation energy
or
Bond energy

→ The bond energy is defined as the strength of the bond as it exist in a molecule or the contribution of the bond between a particular pair of atom A–B in a molecul to the total bond energy present in that molecule

4 Polarity of bonds :–

→ Besides the properties already discribe certain co-valent bonds have another properties polarity two atoms joint by a co-valent bond share electrons their nuclei are heald by the same electrons but in most cases the two nucleie do not share the electrons equally.

– The electron is dengeor about one atom than the other one end of the bond is relatively negative and other end is relatively positive that is there is a negative pole & ~~are~~

positive pole. Such a bond is said to be a polar bond.

Example $H^{\delta+}-O^{\delta-}-H^{\delta+}$

H_2O

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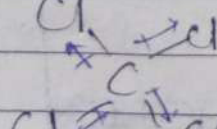
* Polarity of molecules:-

A molecules in a polar if the centre of negative charge does not coincide with the centre of possitive charge Such a molicule constitute a dipole to equal and opposite charge seperate in a space.

— A dipole is optaint Symbolized by "$\overrightarrow{+\longrightarrow}$" where the arrow point from Possitive to negative. T

→ The molicule possess a dipole moment which is equal to the magnitude of charge electron multiplied by distance "D" between the centre of charge

→ Methane and Carbon tetra Chloride (CCl_4) and zero(0) dipole moment we certenly wood expected the indevisual bonds of Carbon tetra Chloride atlist to be polar because of the very Symetrical tetra hedral arrangement



$\mu = 0D$

where, Dipole moment = μ
Distance = d
magnitude of charg = e

$\mu = e \times d$

dibye esu cm

→ unit D

* Structure and physical properties
we have just discussed on physical properties of compound dipole movement other physical properties like melting point boiling point or solubility in a particular solvent. are also of Consernt to us

→ The physical perperties of a new Compound give valuable structure. In atempting to Synthesized a new Compound

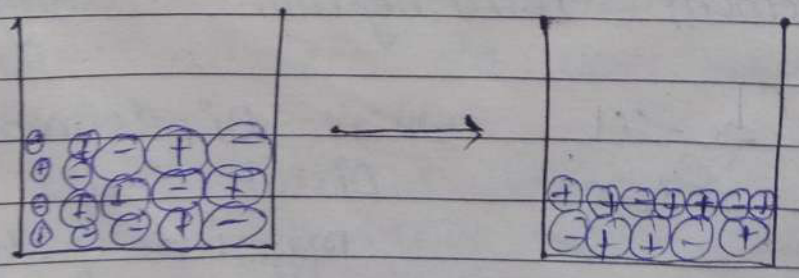
Example - ~~A mu~~

we must plan a series of reaction to convert a compound that we have into the compound that we want

Q. melting point

In a crystaline the particals actings has structural unit ion or molicoule are arranged in some very regular Symmetrical way. There is a geometrical pertarn reapted over and over within a crystal.

→ melting is the change from highly ordered arrangement of particles in the crystaline



melting of an ionic crystal. The units are ion

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Boiling point :-

→ The particles in a liquid are arranged less regularly are free to move about than in a crystal each particle is attract by a number of other particles. Boiling involves the breaking away from the liquid of individual molicules or pairs of oppositily charged ions this occurs when a temprature is reached at which the thermal energy of the particles is great enough to over the the co-hesive force that hold them in the liquid.

Solubility :-

— when solid or, liquid dissolved the structural unit ions or molecules become seprate from each other. And the specie of liquid in b/w become seprate occupied by solvent molecules in dissolutions as in melting & boiling energy must be be supplied to over come the inter-ionic or inter-molicular force.

→ The energy required to breaks the bonds b/w solute paticles is supplied by the formation of bond. b/w the solid solute particles & the solvents molecules the attractive force are replaced by new molecules.

☆ Inter molicular forces :—

what kinds of forces nuterls molecule to each other like interionic force these forces seems to be electrostatic in nature involving attraction of tve

Charge & negativ charge. There are two kinds of intermolecular force

i) Dipole & dipole intraction
ii) ~~No~~ Van-der waals forces-

i) Dipole - Dipole Intraction-
The attraction of the positive end of one polar molecule for the negative end of another polar molecule in hydrogen chloride-

Example - The relatively positive hydrogen of one molicule is attracted to the relatavely negative chlorine of another.

- As a result of dipole - dipole intraction polar molecules are generally held to each other more strongly then are non polar molecules of comparable molicular weight this differences in straingth of inter molicular force is reflected in the physical properties in the compound.

ii) Van-der waals forces-
There must be forces b/w the molecules of a non polar compound sciens even such compounds can solidify Such attraction are called Vander-waal forces.