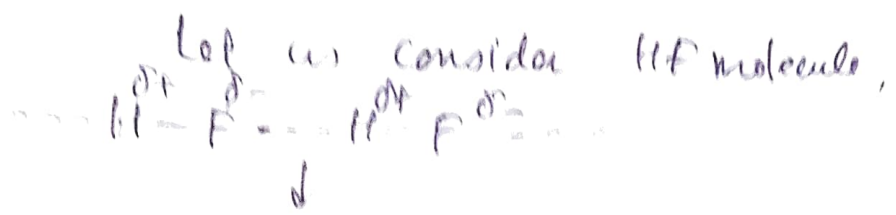


Hydrogen bond

H-bond: (H atom acting as a bond)

Discovery of H-bond

Latimer and Rodobusch (1920)



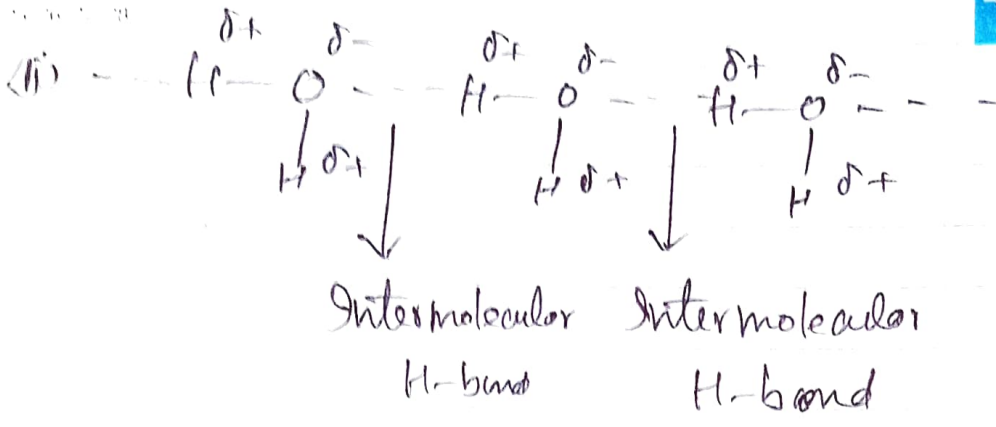
It is defined as electrostatic force of attraction between a polarised hydrogen and a highly electronegative element of same or different molecule of same or different compounds.

(2) It is a weak bond. It is ~~weak~~ an intermediate force between a covalent bond and van der waals forces.

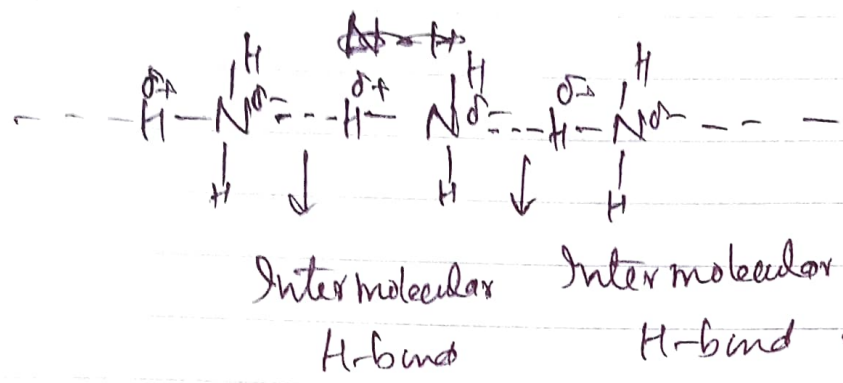
	Covalent bond	H bond	Van der waals forces
Avg bond strength	50 - 100 kcal/mol	5, 10 kcal/mol	1, 2 kcal/mol

Conditions for the formation of H bond:

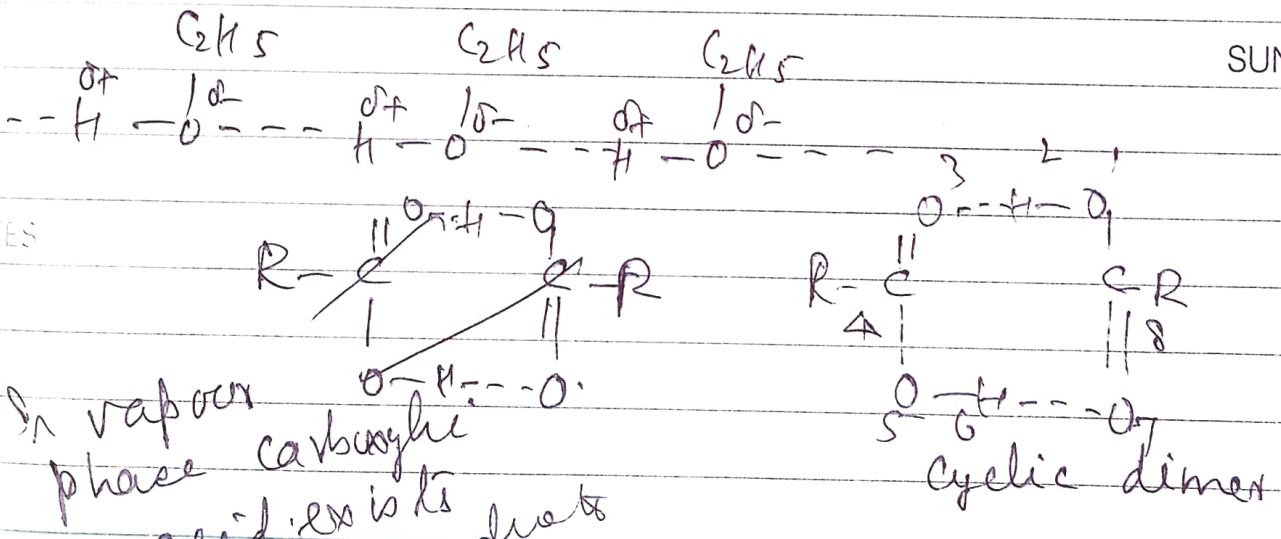
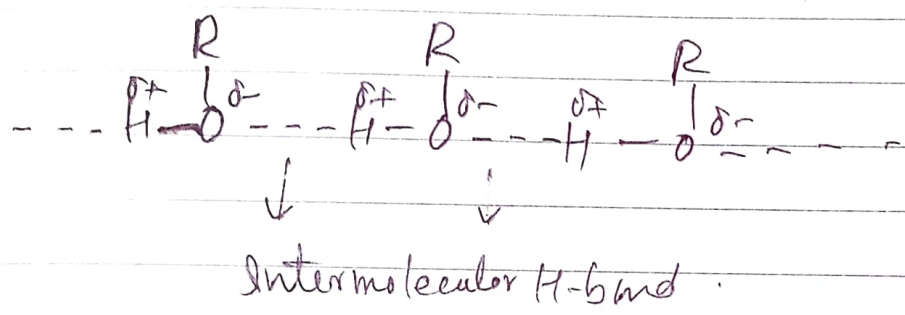
(1) For the formation of a H bond, a hydrogen atom is ~~intermediate~~ between a bond and a free atom in between two highly electronegative elements.



(iii)



(iv) Between the molecules of alcohol, carboxylic acids and amines:



In vapour phase carboxylic acid exists as dimer intermolecular H-bond

8-member ring