

7/2/24

B.Sc Part III

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Types of hydrogen bonding:-

Hydrogen bonds can be classified into two types:-

- (i) Inter-molecular H-bonding
- (ii) Intra molecular H-bonding.

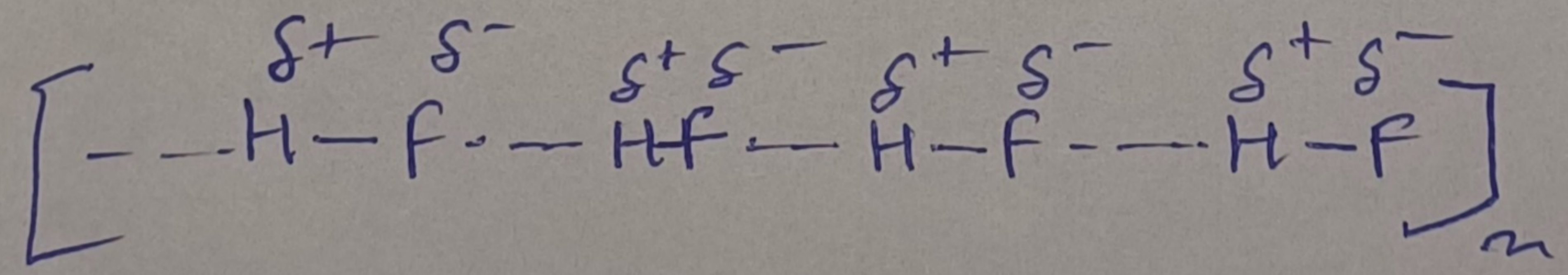
(i) Intermolecular H-bonding:-

the hydrogen bond occurring between two or more similar or different molecules are called intermolecular hydrogen bonding.

ex:- H<sub>2</sub>O, NH<sub>3</sub> and HF molecules.

When a no. of HF molecules are brought together, the positive end of one dipole

H<sup>δ+</sup> — F<sup>δ-</sup> attracts the negative end of the other dipole. H<sup>δ+</sup> — F<sup>δ-</sup> and these molecules are associated together to form a cluster (HF)<sub>n</sub>.



The formation of the associated molecules of the hydrides of N and O. viz. (NH<sub>3</sub>)<sub>n</sub> and (H<sub>2</sub>O)<sub>n</sub> is due to the existence of their intermolecular hydrogen bonding. hydrogen bonding in NH<sub>3</sub> and H<sub>2</sub>O molecule.

