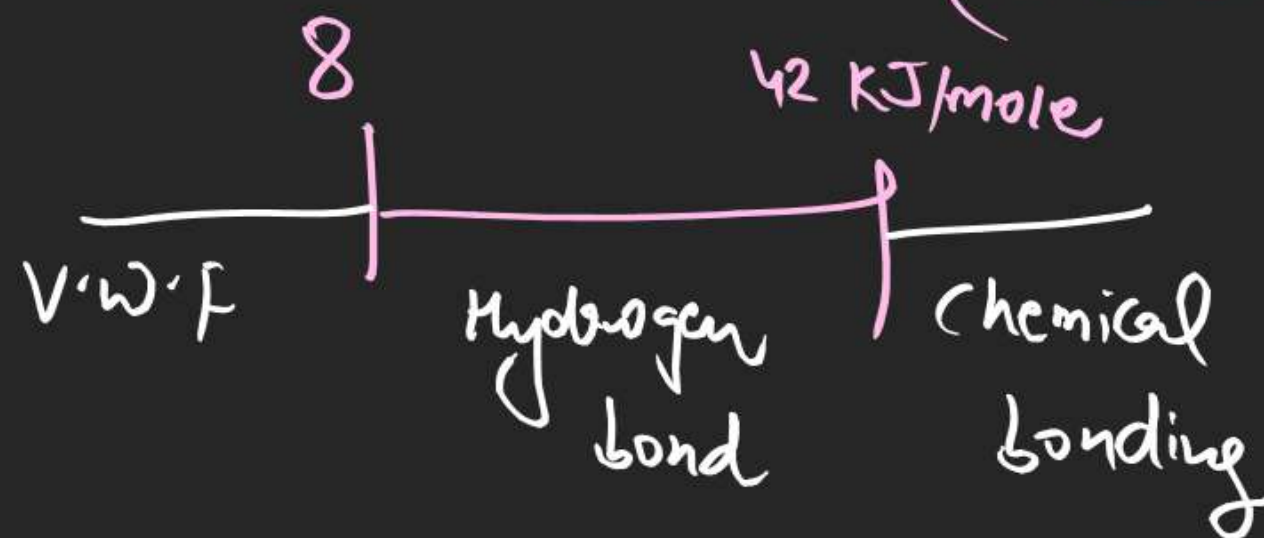
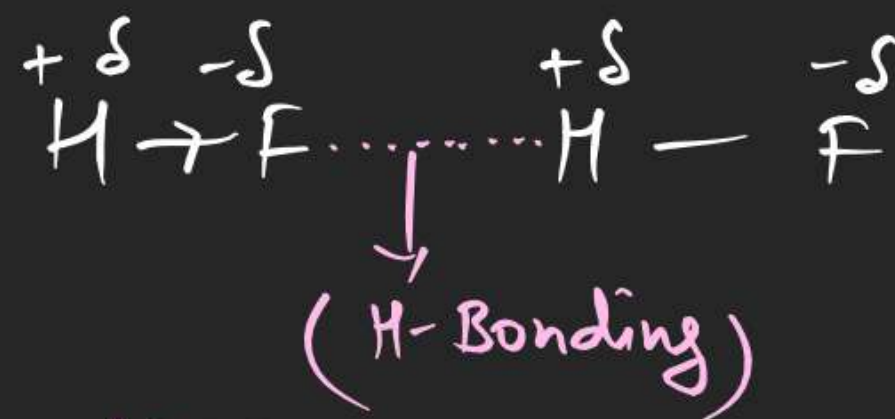


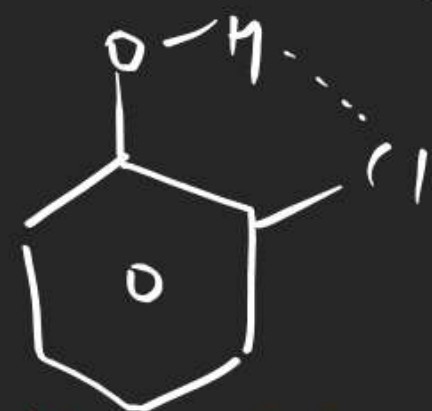
Hydrogen bonding

It is an electrostatics force when hydrogen present between two more electroneg. element

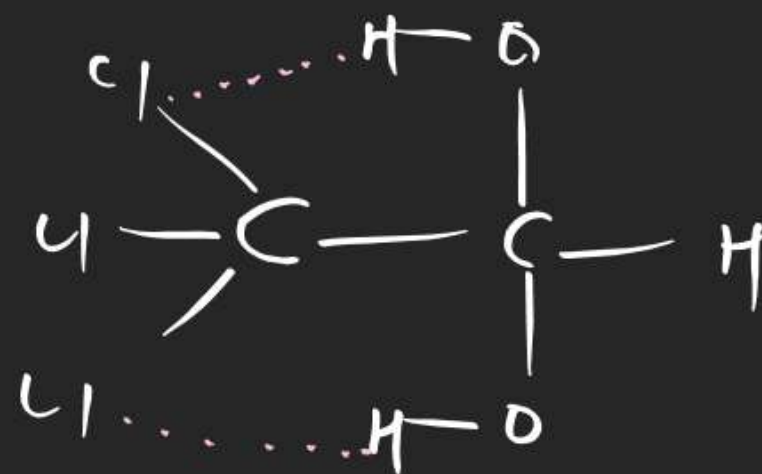


Note \Rightarrow it is not a true bond
it is electrostatic force

\Rightarrow Hydrogen bond can form F, O, N \equiv C
and sometimes Cl



Ortho Chlorophenol



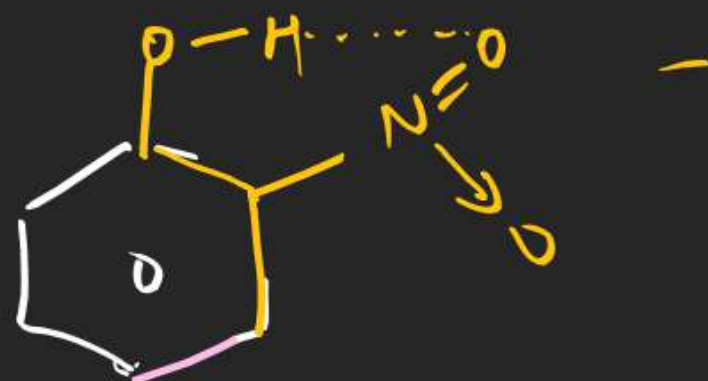
Chloral Hydrate

Hydrogen bonding type

Intra

With in molecule

Chelat
Ring



ortho nitrophenol

Chelation process

m.p/B.p

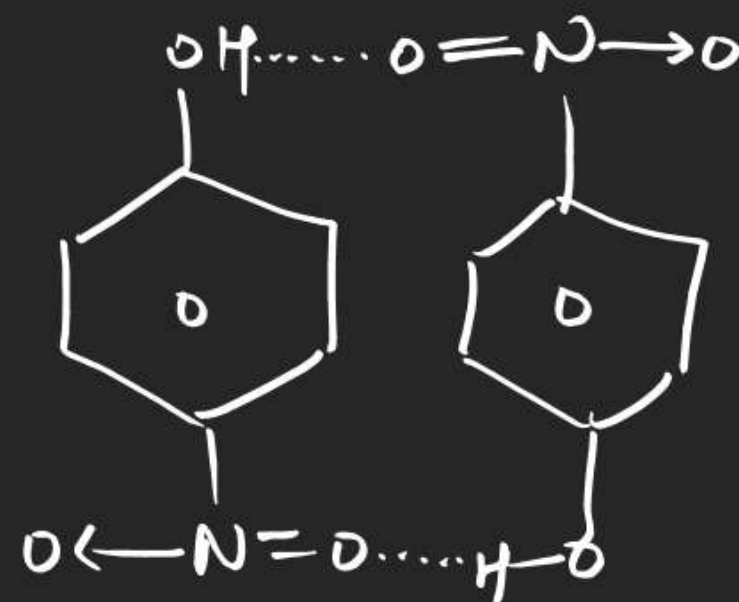
ΔH_{vap}

Viscosity

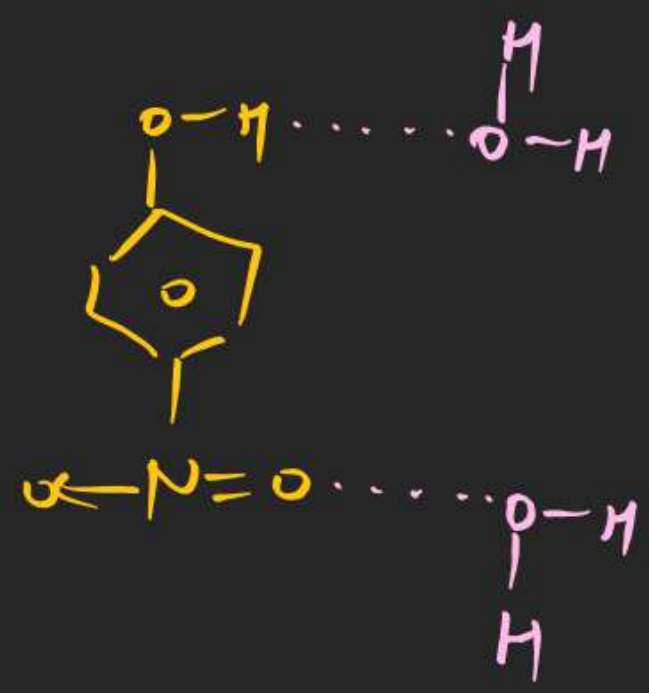
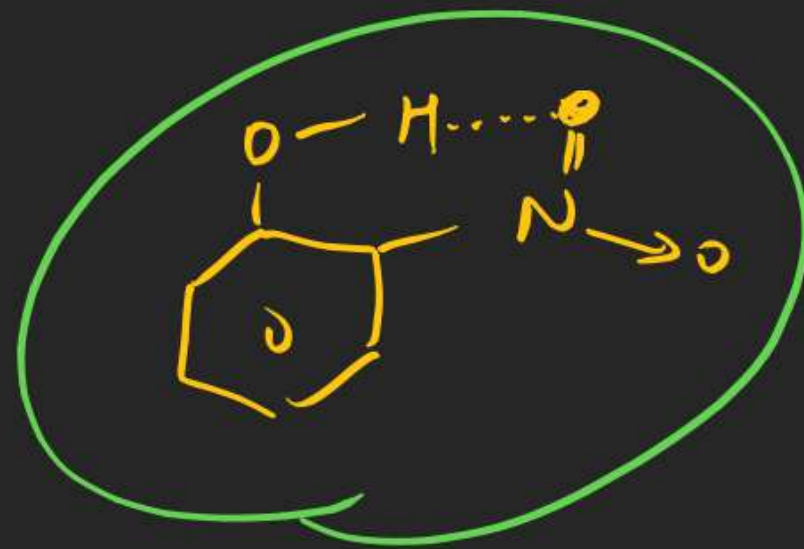
<
<
<

Inter

between molecule



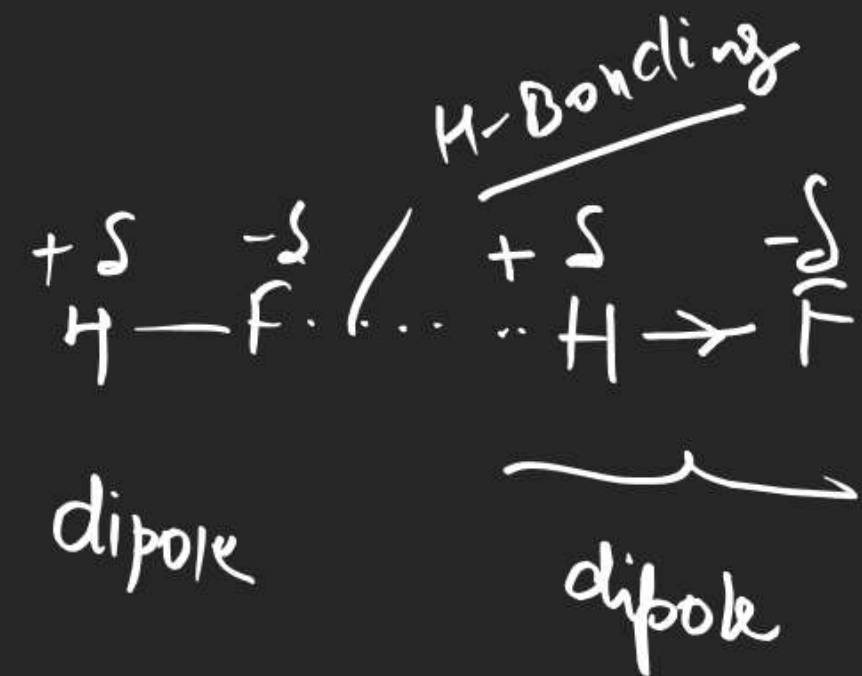
association process
para nitrophenol



Solubility

<

Hydrogen bonding is special case
of dipole-dipole Interaction



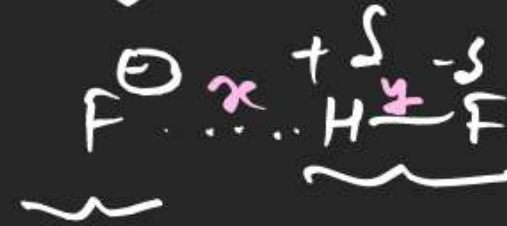
type of H-Bonding

an asym

B.L

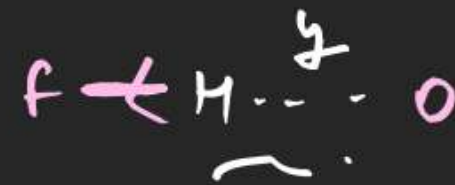
$$\alpha < \gamma$$

sym



Ion-dipole

$$\alpha \approx \gamma$$



$\overset{B \cdot L}{\text{order}}$ $x < y < z$
Strength order

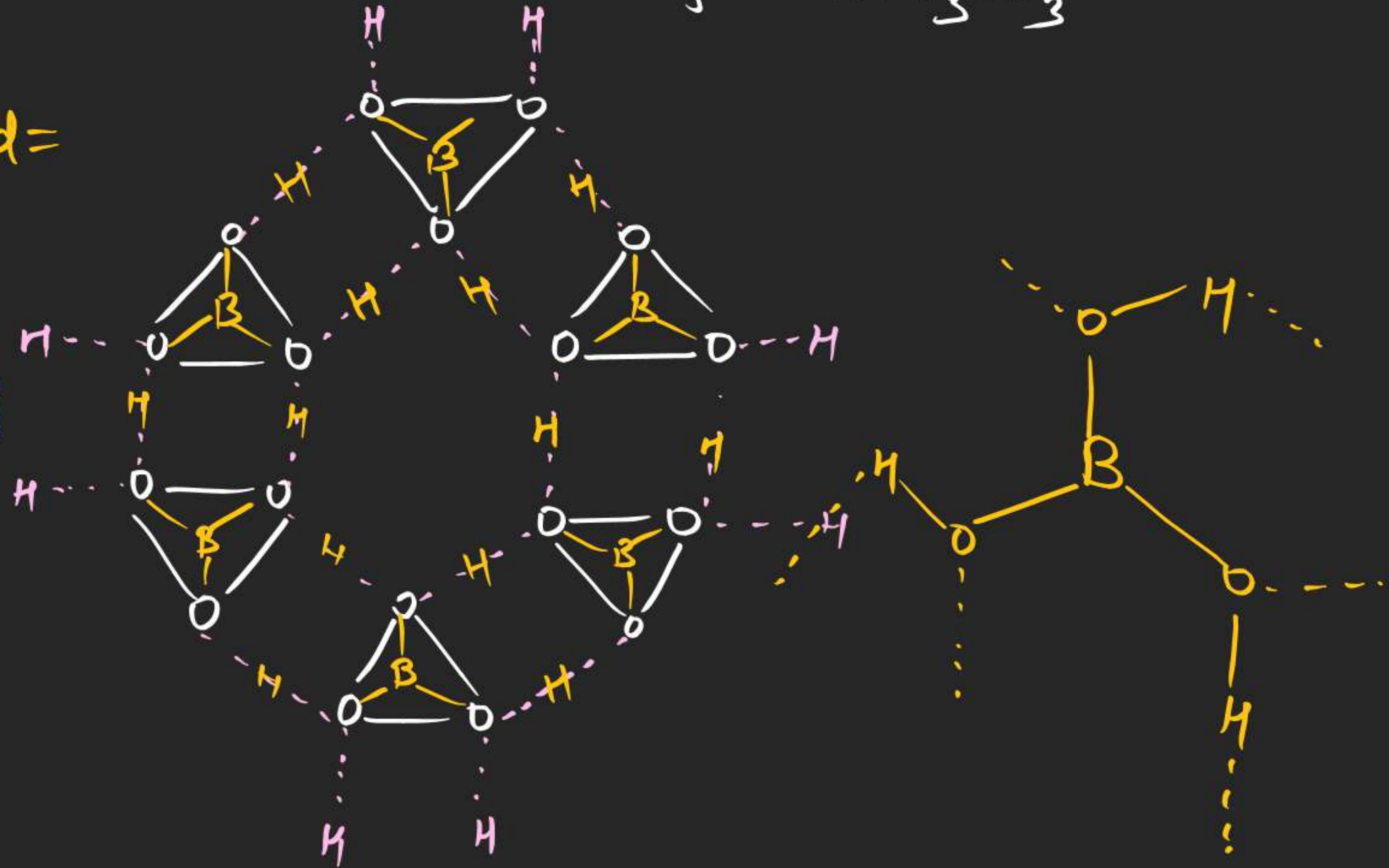
$$x > y > z$$

$$B \cdot S \propto \frac{1}{B \cdot L}$$

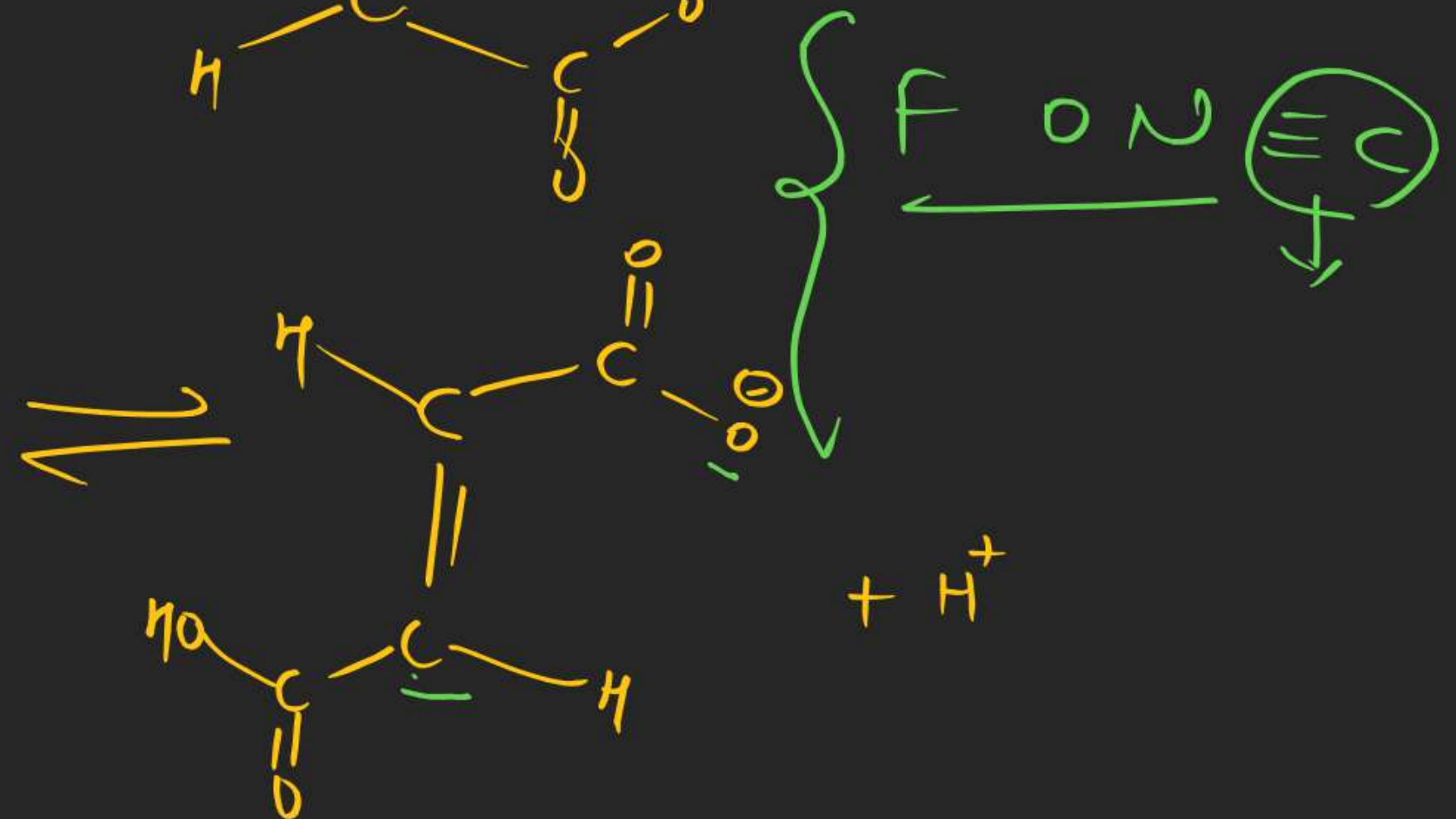
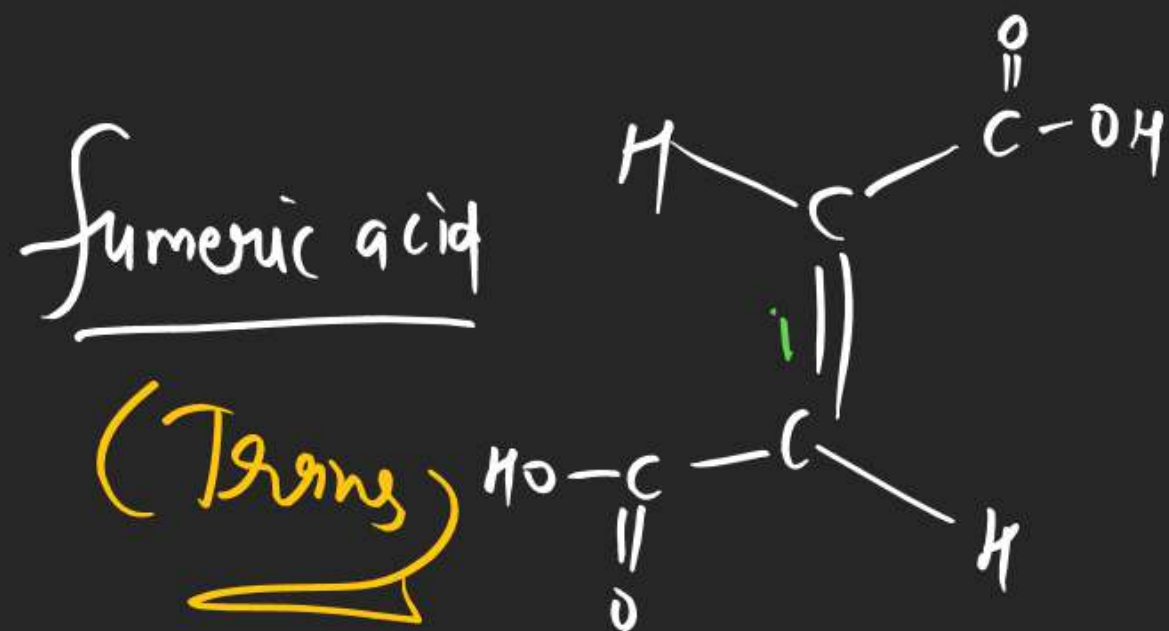
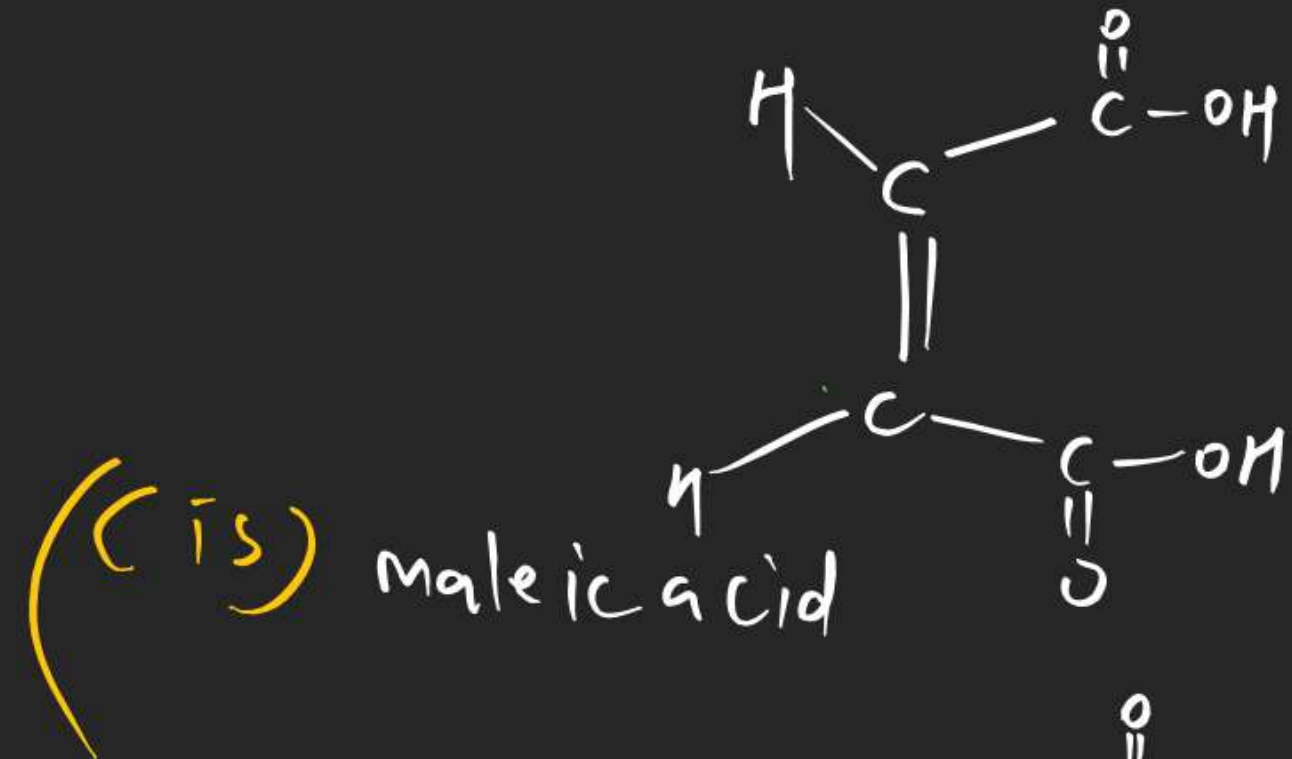
Draw the structure of solid H_3BO_3

one boric acid =
6 Hbond

Inter H-Bonding



Which is more proton donor acid
fumaric acid or maleic acid.



$$K_{a1} \text{ of maleic acid} > K_{a1} \text{ of fumaric}$$

$$K_{a2} \text{ of maleic acid} < K_{a2} \text{ of fumaric}$$

$$\boxed{pK_a \propto \frac{1}{K_a}}$$

K_{a1} = first Ionisation const.
(acid)