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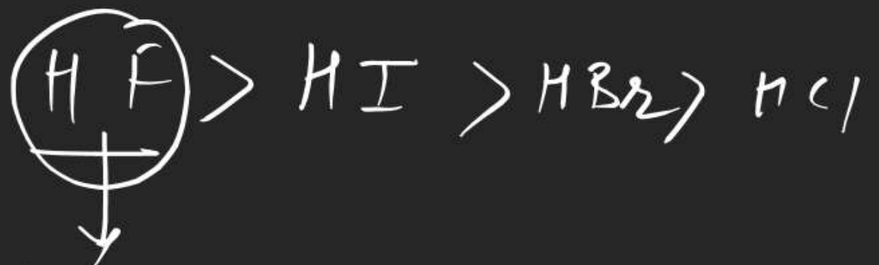
Hydrogen bonding

B.P $\propto$ mol. weight

B.P $\propto$ attl. b/w molecules

HF HCl HBr HI



due to H-Bonding

H_2O H_2S H_2Se H_2Te

$H_2O > H_2Te > H_2Se > H_2S$

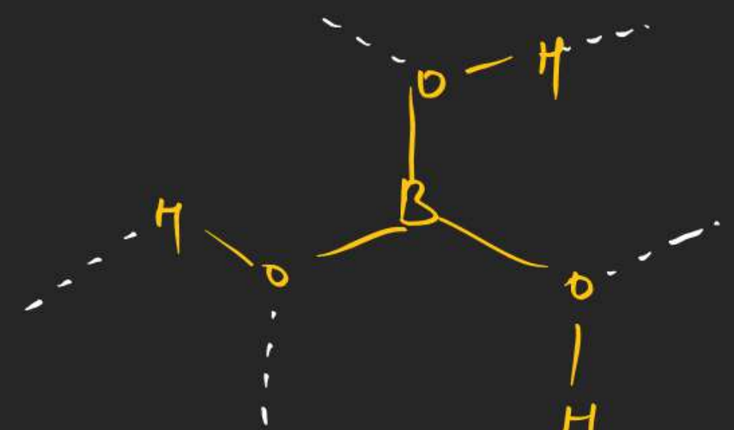
due to H-Bonding

Qual B.p order

NH_3 PH_3 AsH_3 SbH_3 BiH_3

$BiH_3 > SbH_3 > NH_3 > AsH_3 > PH_3$

due to H-Bonding



Order B.P

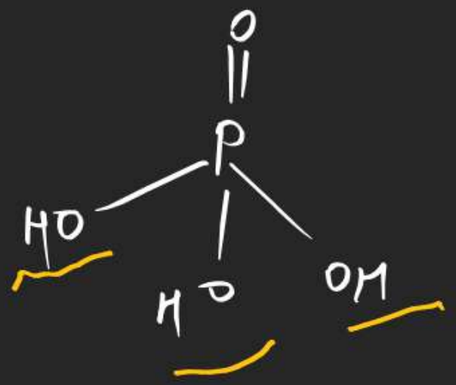
$H_3BO_3 > Me_3BO_3$

$H_2SO_4 > Me_2SO_4$

$H_3PO_4 > Me_3PO_4$

$Me = CH_3$

H_3PO_4

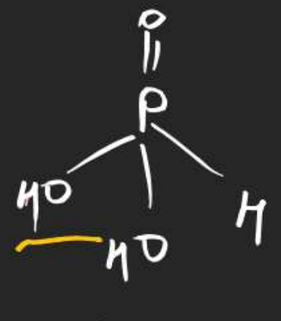


KH_2PO_4 ✓

K_2HPO_4 ✓

K_3PO_4 ✗

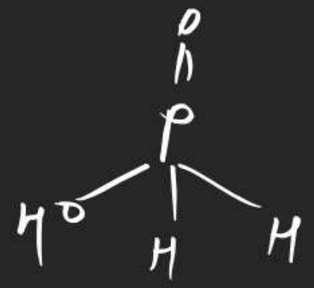
H_3PO_3



KH_2PO_3 ✓

K_2HPO_3 ✗

H_3PO_2



KH_2PO_2 ✗

K = Potassium

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Critical temp $\propto$ attl b/w molecule

order.

∴ $O_2 < H_2O$

H_2O_2 H_2O

no of H-Bond of H-Bond

Strength of H-Bonding

$H_2O_2 < H_2O$

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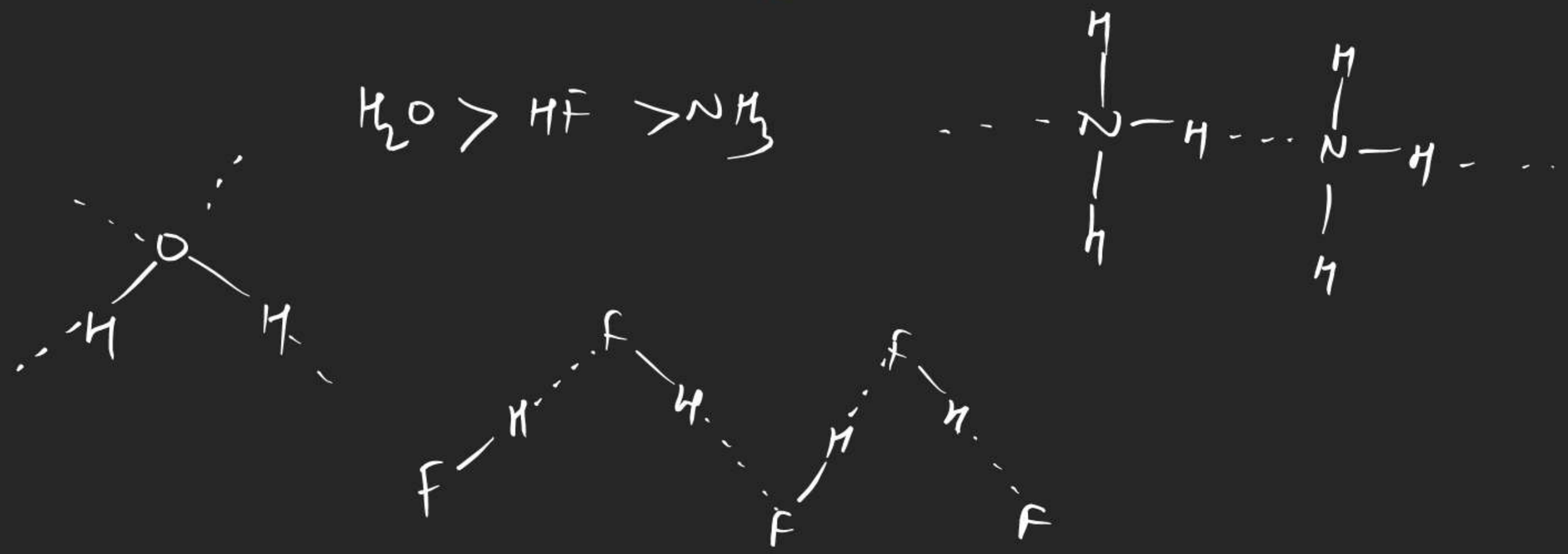
order of B.P

HF H_2O NH_3

$H_2O > HF > NH_3$



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Strength of H-Bonding

$HF > H_2O > NH_3$

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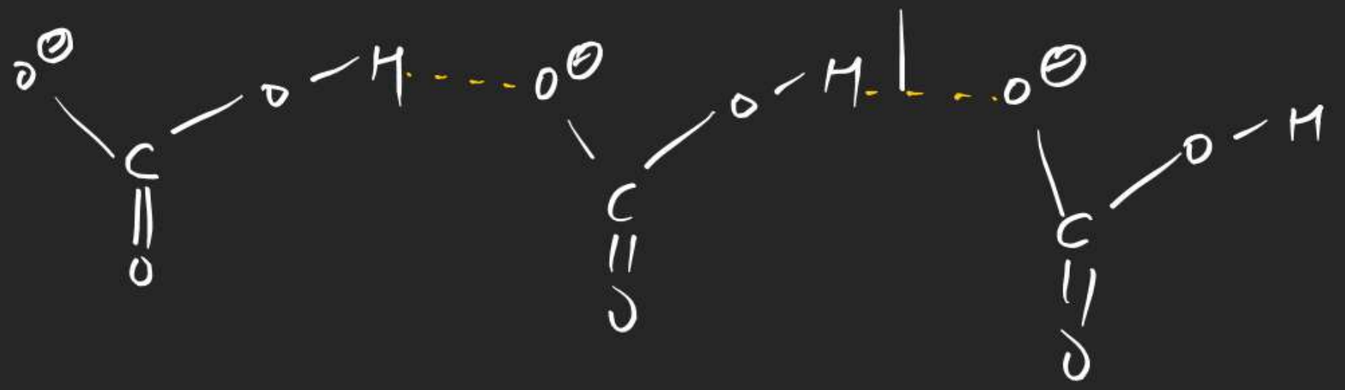
$NaHCO_3(s)$

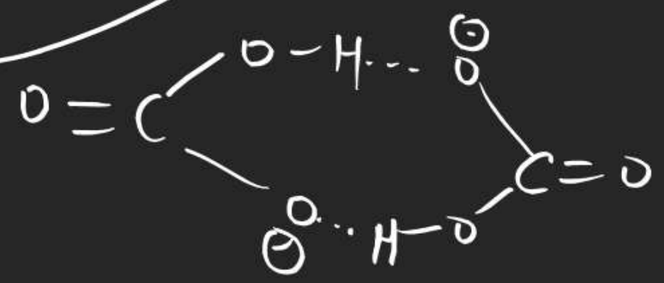
Ion-dipole (H Bonding)



$NaHCO_3$ (solid)

Solid Polymeric structure of $NaHCO_3$ due to Massive H-Bond [∞ - H-Bonding]

$KHCO_3$ $RbHCO_3$ $CsHCO_3$



Compact H-Bonding

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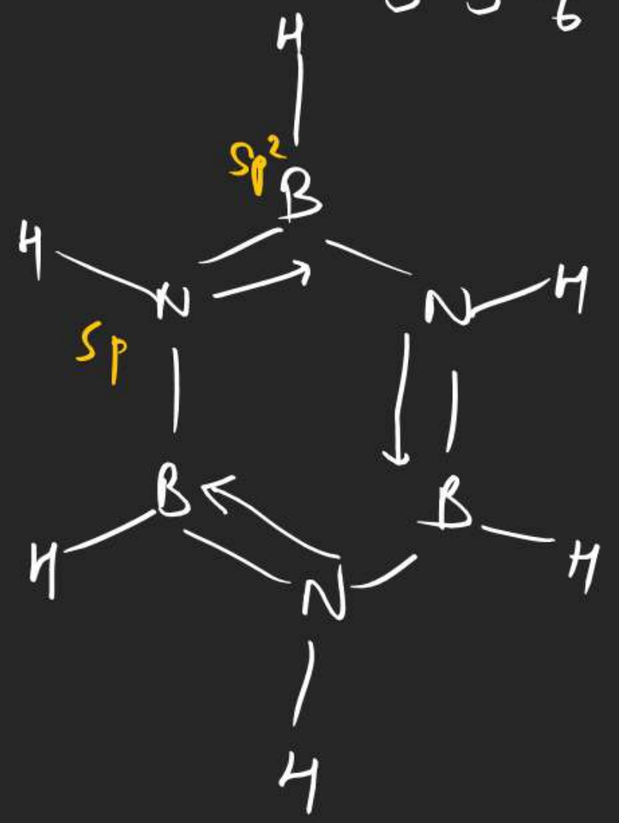
H

$B_3N_3H_6$



sp^2

planar

$\mu = 0$

Non polar

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Lewis

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XeF_8^{-2} $\Rightarrow$ Square antiprismatic

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XeF_8^{-2}