

D) Soln. of Acidic Salt



HCO_3^- : Amphoteric

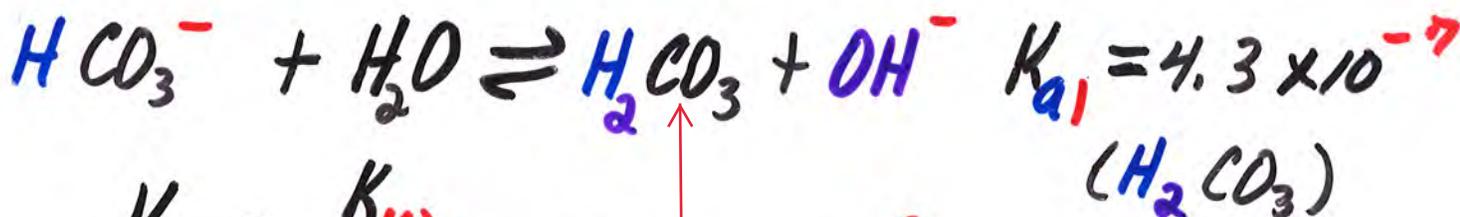
Look at both acid ionization
& anion hydrolysis.

1) Acid Ionization



K_{a2} for HCO_3^- acting as an acid

2) Anion Hydrolysis



$$K_b = \frac{K_w}{K_{a1}} = 2.3 \times 10^{-8}$$

HCO_3^-

K_b for HCO_3^- acting as a base

This is K_a for the conj acid
of bicarbonate, H_2CO_3

$K_b > K_{a2} \Rightarrow \text{soln. is Basic}$

K_b for HCO_3^- acting
as a base

K_a for HCO_3^- acting
as an acid