Arrhenius

Acid H^+ , Base OH^-

Bronsted-Lowry

conjugates

Acid H^+ donor , Base H^+ acceptor

Lewis Theory

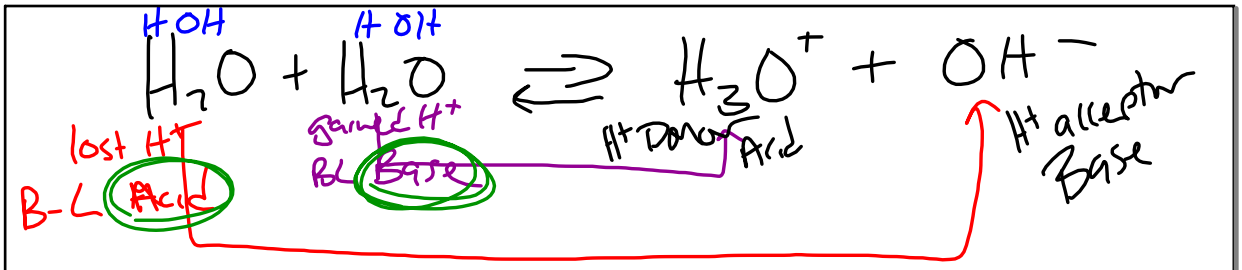
Acid

e^- pr acceptor

, Base

e^- pr donors

Feb 25-8:04 AM

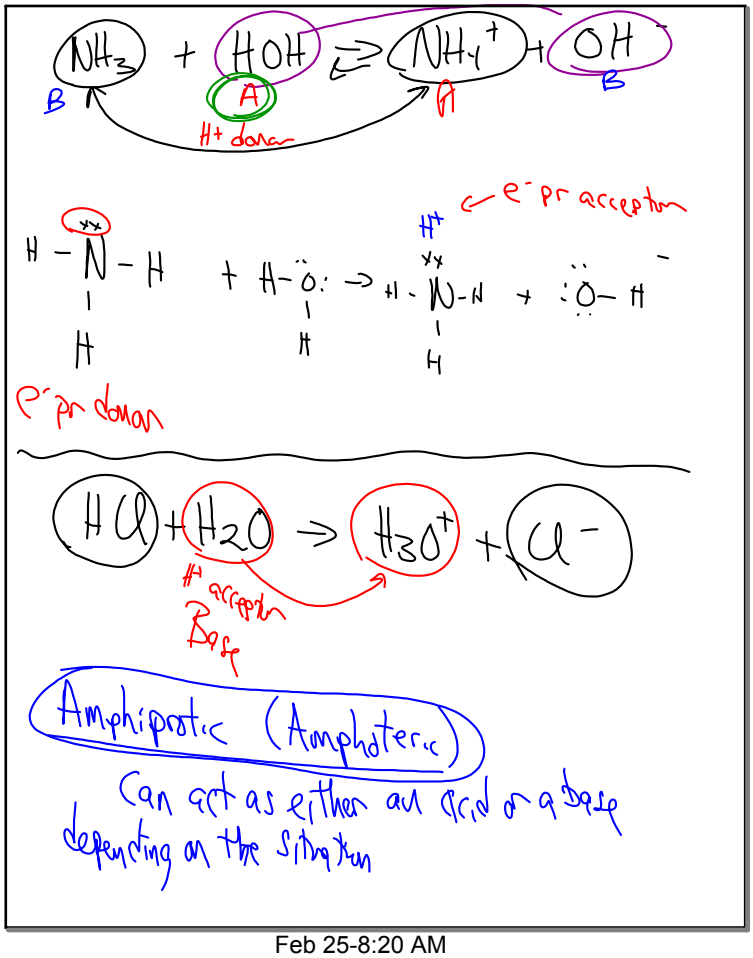


Conj. acid base pairs: (proton)

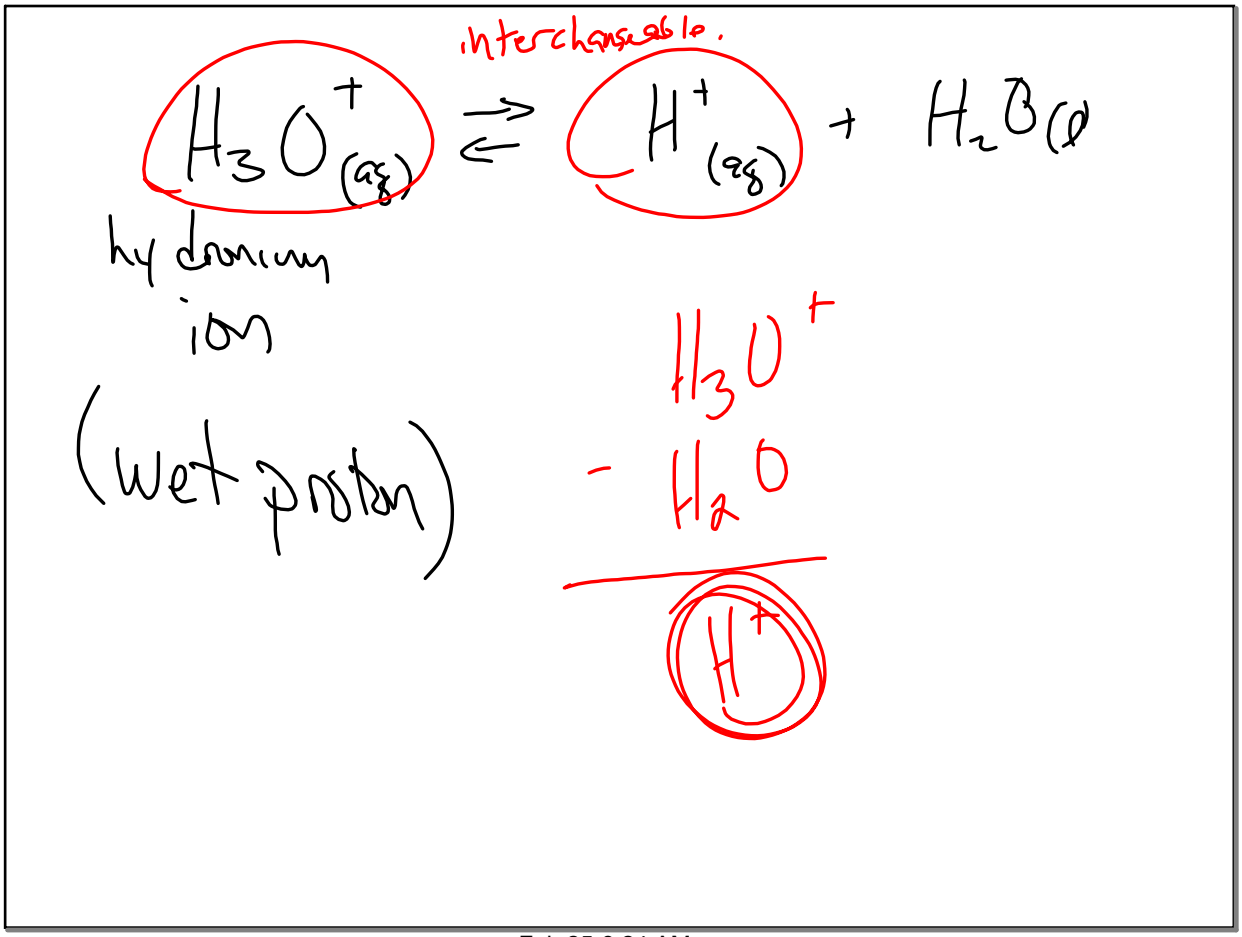
differ by only 1 H^+

(HOH , OH) (H_2O, H_3O^+)

Feb 25-8:16 AM



Feb 25-8:20 AM



Feb 25-8:24 AM

$H_2O_{(l)} \rightleftharpoons H^+_{(aq)} + OH^-_{(aq)}$

"Auto ionization of water"

$$K_w = \frac{[H^+][OH^-]}{1} = 1 * 10^{-14} \text{ at } 25^\circ C$$

ion product Constant for Water

Feb 25-8:28 AM

Amphiprotic substances

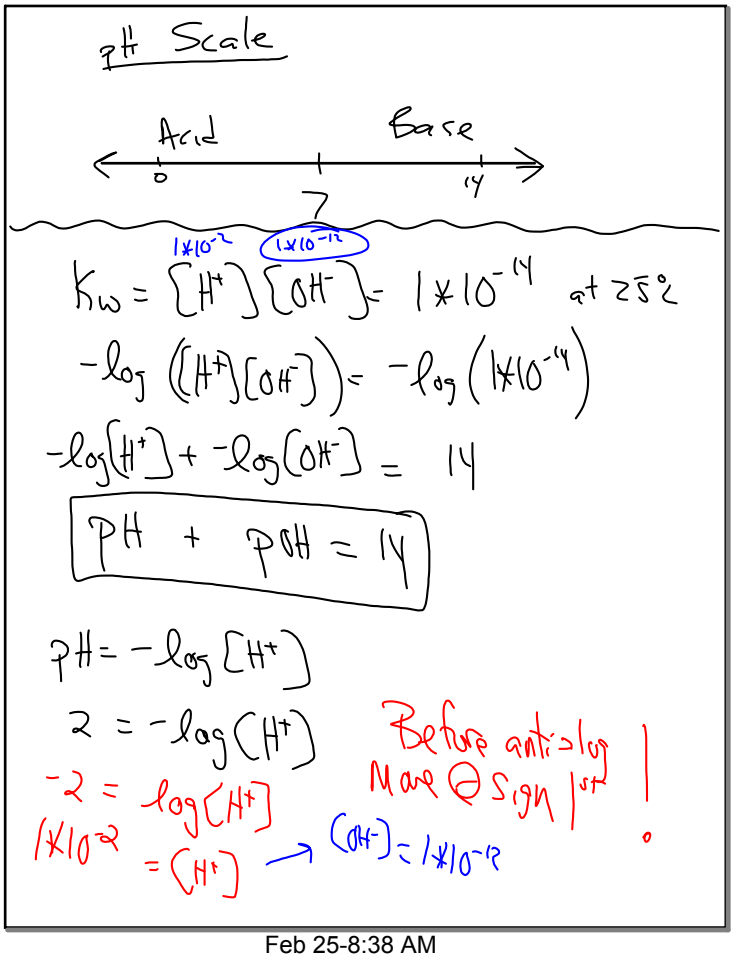
$H_2SO_4 \rightarrow HSO_4^- \rightarrow SO_4^{-2}$

A CB A CB

Any intermediate of a poly protic acid is amphoteric/amphiprotic.

$H_3PO_4 \rightleftharpoons H_2PO_4^- \rightleftharpoons HPO_4^{-2} \rightleftharpoons PO_4^{-3}$

Feb 25-8:34 AM



Feb 25-8:38 AM

$$pH + pOH = 14$$

$$[H^+][OH^-] = 1*10^{-14}$$

$$pH = -\log[H^+]$$

$$pOH = -\log[OH^-]$$

Feb 25-8:44 AM

16 / 20, 28, 40

Feb 25-8:46 AM