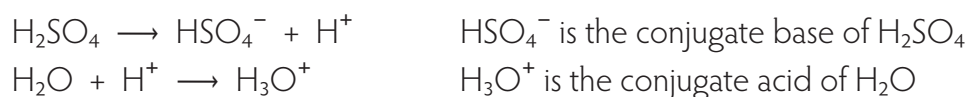


## Acid & Base, Conjugate Acid & Conjugate Base

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- An *acid* donates protons (i.e., Hydrogen ions) in a reaction
- A *base* accepts protons (i.e., Hydrogen ions) in a reaction
- A *conjugate base* results from removing a single H<sup>+</sup> from an acid.
- A *conjugate acid* results from adding a single H<sup>+</sup> to a base.

Thus,



## Concentration, pH, and pOH

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### Concentration of H<sup>+</sup> & OH<sup>-</sup>

$$[\text{H}^+] \times [\text{OH}^-] = 1 \times 10^{-14} \quad \leftarrow \text{Remember that the brackets mean "concentration of..."}$$

*In a neutral solution:*

$$[\text{H}^+] = 1 \times 10^{-7} \quad [\text{OH}^-] = 1 \times 10^{-7}$$

### pH & pOH

$$\begin{array}{ll} \text{pH} = -\log [\text{H}^+] & \leftarrow \text{"Log" is } \log_{10}. \text{ You } do \text{ remember your logarithms, yes?} \\ \text{pOH} = -\log [\text{OH}^-] & \end{array}$$

$$\text{pH} + \text{pOH} = 14$$

$$\begin{array}{l} [\text{H}^+] = 10^{-\text{pH}} \\ [\text{OH}^-] = 10^{-\text{pOH}} \end{array}$$

Acids	pH < 7	pOH > 7
Bases	pH > 7	pOH < 7
Neutral	pH = 7	pOH = 7