**What is the conjugate base of the acid HCl?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is the conjugate acid of the base H2O?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Buffers**

* Are solutions that resist changes to pH
* Buffered solutions exist in nature – your blood is buffered otherwise you would die!
* Buffer solutions can be made in the lab to keep a solution’s pH approximately where you need it to be
* If you add an acid pure water the pH drastically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* If you add a base to pure water the pH drastically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Buffers absorb excess acid or base and result in very small changes to the pH … until you reach its **buffering capacity** (remember soil buffering capacity from Sec IV)

**Buffers are made from:**

1. A Weak Acid and its Conjugate Base

e.g. CH3COOH(aq) + H2O(l) ↔ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. A Weak Base and its Conjugate Acid

e.g. NH3(aq) + H2O(l) ↔ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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