**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student # (last 3 digits only) XXX-XXX-\_\_\_\_\_\_\_\_\_\_**

**Biology 2290 Section X Quiz #2 (5%)**

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(1) You need to make *exactly* 10.0 ml of a 250 μM solution. How would you prepare this from a 10 mM stock solution in a *single step*? (i.e. **x** ml of stock solution + **y** ml of water).

(2) If 2.5 ml of a 650 μM solution is added to 17.5 ml of water, and 1.0 ml of this diluted solution is added to 5.0 ml of water, what is the final concentration in moles/litre? (Give the answer as an exponent).

(3) A solution has a H+ concentration of 3.97 x 10-5. What is its pH?

(4) If a solution has a H+ concentration of 4.27 x 10-3, what is its OH- concentration?

(5) A buffer compound has a pKa of 2.95. If a solution of this compound contains 0.07 moles/litre of the conjugate base and 0.09 moles/litre of the weak acid, what is its pH?