Quiz: 16.3–16.4

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) The highest pH for an effective buffer occurs when the base is how many times as concentrated as   the acid?

   A) 8   B) 10   C) 5   D) 25   E) 40

1) _____

2) Which of the following is TRUE?

   A) At the equivalence point, the pH is always 7.
   B) An indicator is not pH sensitive.
   C) A titration curve is a plot of pH vs. the [base]/[acid] ratio.
   D) The equivalence point is where the amount of acid equals the amount of base during any acid–base titration.
   E) None of the above are true.

2) _____

3) A **1.50 L** buffer solution is 0.250 M in HF and 0.250 M in NaF. Calculate the pH of the solution after the addition of 0.0500 moles of solid NaOH. Assume no volume change upon the addition of base. The K_a for HF is 3.5×10^{-4}. **ADDITION TO A BUFFER WILL NOT BE ON THE EXAM**

   A) 2.89   B) 3.57   C) 3.34   D) 3.63   E) 3.46

3) _____

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SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

4) Sketch the titration curve for a strong acid titrated with a strong base. Make sure to indicate the equivalence point (and whether it is acidic, basic or neutral) and the buffer region.

4) _____

5) Sketch the titration curve for a monoprotic weak acid titrated with a strong base. Make sure to indicate the equivalence point (and whether it is acidic, basic or neutral) and the buffer region.

5) _____

1) B
2) D
3) B
4) See figure in middle of page 732.
5) See figure in middle of page 621.