

Vasquez High School -- Chemistry B -- Exam #6 -- Chapter 16 -- 65 points

Write TRUE if the statement is true OR write the word(s) that substitute for the underlined word(s) that make it true. Writing false only earns partial credit. Three points each.

- _____ 1) A buffer can normally contain a weak acid and its conjugate acid ion.
- _____ 2) A neutralization reaction always produces a salt and water as its products.
- _____ 3) The ion product of water, $K_w = 10^{-14}$, is maintained in every aqueous solution.
- _____ 4) A good example of an acidic substance is lemon juice.
- _____ 5) The proper name for H_3O^+ is the amphoteric ion.

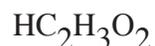
Short answer/fill-in. Answer each neatly and completely. Three points apiece.

- 6) What is the purpose of performing a titration? _____

- 7) What is the definition of a base in all three ways shown? _____

- 8) What does mean that an acid is weak? _____

- 9) An indicator is a(n) _____ substance that changes color in either _____ or _____ solutions.
- 10) Give an example of a diprotic acid: _____ Now a triprotic one: _____
Now a different acid that is an example of a strong one: _____
- 11) What is the conjugate base of hydrocyanic acid, HCN? _____
Give an example of the formula for a strong base: _____
Finish this equation: $pH + pOH =$ _____.
- 12) Circle the strongest acid:



Calculation Section. Show all appropriate formulas and show ALL your work. No work, no credit. Five points

apiece on these.

13) What is the pH of a 1.65×10^{-3} M solution of HNO_3 ?

14) What is the pH of a 7.26×10^{-5} M solution of $\text{Ca}(\text{OH})_2$?

15) What is the $[\text{H}^+]$ of a solution whose pOH is 13.73?

16) Only 35 molecules in 10,000 molecules of vasquezic acid, HVaO_3 , dissociates. What is the pH of a .0025 M solution of it?

17) If 50.0 mL of a HCl solution requires 20.0 mL of 0.20 M NaOH to titrate it to its equivalence point, what is the concentration, in moles per liter, of the HCl solution?

18) Draw a pH curve with the proper axes, labels, numbers and curve.



19) EXTRA CREDIT. Three points. What does the p in pH stand for? _____