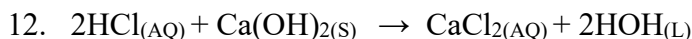


ANSWERS for the Practice Test for Acids and Bases

1. What is a hydronium ion? H_3O^{+1} ion, another way to write an acid ion.
2. The products of every Acid Base neutralization are a salt and water. Salts are ionic compounds.
3. Most acid base indicators are weak acids.
4. The only negative ion in this solution would be SO_4^{-2} .
5. The 4 ways to describe the only positive ion present are AQ H^{+1} ions protons, H_3O^{+1} ions or, H^{+1} ion donors.
6. All the acids are monoprotic (one H^{+1} ion in the formula), except sulfuric, sulfurous, + carbonic which are diprotic (2 H^{+1} in formula), and phosphoric is triprotic (3 H^{+1} in formula).
7. In an alternate theory of acids and bases, a base is a hydrogen ion acceptor (like NH_3)
8. In an alternate theory of acids and bases, an acid is a hydrogen ion donor (like H_2O)
9. Bromocresol green in a solution with pH of 4.5, turns green (yellow blue mix)
10. Carbonated water = carbonic acid, pH below 7, shows up as colorless.
To make this pink, add sufficient base to raise the pH to 8 or higher.

11. Use $M_A V_A = M_B V_B$ formula to get:

$$(1)(2.28 \text{ m})(25.00 \text{ mL}) = (M_B)(20.0 \text{ mL})(2) \quad \text{solve for } M_B = 1.43 \text{ M Base (3 SF)}$$



13. skip

14. 10,000X stronger than pH 6.2 is pH 2.2 All whole number changes in pH are 10X.

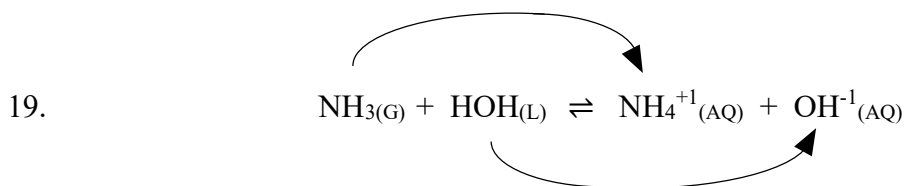
15. A solution with a pH of 1.43 has $1 \times 10^{-1.43}$ moles H^{+1} per liter

16. A H^{+1} concentration of 1×10^{-2} , means that the solution's pH 2

17. Neutralization requires the $\text{H}^{+1} = \text{OH}^{-1}$, you would need 1×10^{-2} moles of OH^{-1} anions. (1/100th of a mole)

18. Use $M_A V_A = M_B V_B$ formula $(2)(4.11 \text{ M})(305. \text{ mL}) = (M_B)(1234 \text{ mL})(1)$

$$\text{solve for the } M_B \quad 2.03 \text{ M} = M_B \quad 3 \text{ SF}$$



Ammonia accepts a H^{+1} ion, therefore it's a base. Water donates this H^{+1} ion, so it's an acid.

20. A hydroxide that would be aqueous would work, for instance, magnesium hydroxide or calcium hydroxide.

21. Make up a good one, with units too!

Like, if 33.4 mL of 1.22 M HCl is exactly neutralized 28.4 mL of KOH, what is the base molarity?