
ANSWERS TO STUDY QUESTIONS

1. hydrochloric acid, HCl; hydrofluoric acid, HF; acetic acid CH₃COOH.
2. phosphoric acid, H₃PO₄, carbonic acid, H₂CO₃; sulfuric acid, H₂SO₄.
3. An Arrhenius acid releases a proton, H⁺, and an Arrhenius base releases an OH⁻.
4. Molarity is defined as "moles per liter." Divide the number of moles by liters to find molarity. The symbol for molarity is "M."
 - a. 5 moles / 2 liters = 2.5 M
 - b. 2 moles / 1 liter = 2 M
 - c. 0.5 / 1 liter = 0.5 M
 - d. 18 grams of HCl = 1 mole HCl. 1 mole / 1 liter = 1 M
5. A strong acid or base ionizes more completely than a weak acid or base.
6. pH = 11. It is a base. 1×10^{-11} mol/liter.
7. pH = 1. It is an acid.
8. 1×10^{-6}
9. 1×10^{-9}

Challenge

10. The hydrogen ion concentration is 1×10^{-7} mol/liter.
The hydroxyl ion concentration is 1×10^{-7} mol/liter..
The pOH is 7.