

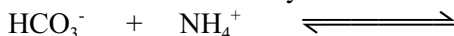
Review: Acid-Base

1. Define and give an example of a Bronsted - Lowry:

- a) strong acid b) weak acid c) strong base d) weak base

Describe an experiment to distinguish between a strong and a weak acid.

2. Complete the Bronsted- Lowry acid base reaction below. Identify the acids and bases.



Acids: _____ Bases: _____

3. Identify the conjugate bases of the following acids ...

- a) HSO_3^- _____ b) HBrO _____

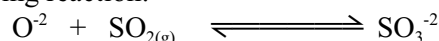
4. The pH of coffee is approximately 5.20. What is the hydronium ion concentration?

5. The pOH of a solution is 10.40. Calculate the hydronium ion concentration.

6. Calculate the pH of:

- a) 0.25 M HNO_3 solution (b) 0.25 M Ba(OH)_2 solution.

7. In the following reaction:



In terms of Lewis definition of acids and bases, explain which of the species is acting as a Lewis acid and which the Lewis Base.

8. Complete the Bronsted- Lowry acid base reaction below. Identify the acids and bases.



Acids: _____ Bases: _____

9. Identify the conjugate bases of the following acids:

- a) NH_3 _____ b) HPO_4^{2-} _____

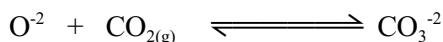
10. The pH of beer is approximately 4.20. What is the hydronium ion concentration?

11. The pOH of a solution is 9.22. Calculate the hydronium ion concentration.

12. Calculate the pH of:

- (a) 0.25 M HClO_4 solution (b) 0.42 M Ba(OH)_2 solution

13. In the reaction:



In terms of Lewis definition of acids and bases, explain which of the species is acting as a Lewis acid and which the Lewis Base.

14. 20.00 cm^3 of 0.75 mol dm^{-3} NaOH is used to neutralize 2.75 mol dm^{-3} of $\text{H}_2\text{SO}_{4(\text{aq})}$. What volume of the $\text{H}_2\text{SO}_{4(\text{aq})}$ is neutralized by NaOH .

15. What is the pH of a KOH , strong base, solution that has a concentration of 0.35 mol dm^{-3} ?

16. A $0.0022 \text{ mol dm}^{-3}$ solution of Mg(OH)_2 was neutralized by 18.2 cm^3 of $0.0150 \text{ mol dm}^{-3}$ $\text{HNO}_{3(\text{aq})}$. Write the balanced equation for this reaction. Write the net ionic equation for this reaction. What volume of Mg(OH)_2 was neutralized?

17. A solution contains 0.00365 g of HCl in 750 cm^3 of water. What is the:

- A) $[\text{H}^+]$ b) $[\text{OH}^-]$ c) pH d) pOH

18. If 9.8 g of H_2SO_4 is dissolved in water to form 500 cm^3 of solution what is the:

- A) $[\text{H}^+]$ b) $[\text{OH}^-]$ c) pH d) pOH e) the equation for the dissociation of the acid in water