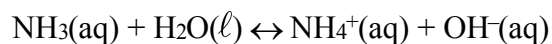


- Which laboratory test result can be used to determine if KCl(s) is an electrolyte?
 - pH of KCl(aq)
 - pH of KCl(s)
 - electrical conductivity of KCl(aq)**
 - electrical conductivity of KCl(s)
- According to the Arrhenius theory, a base reacts with an acid to produce
 - ammonia and methane
 - ammonia and a salt
 - water and methane
 - water and a salt**
- An aqueous solution of lithium hydroxide contains hydroxide ions as the only negative ion in the solution. Lithium hydroxide is classified as an
 - aldehyde
 - alcohol
 - Arrhenius acid
 - Arrhenius base**
- Which substance is an Arrhenius acid?
 - Ba(OH)_2
 - $\text{CH}_3\text{COOCH}_3$
 - H_3PO_4**
 - NaCl
- The pH of an aqueous solution changes from 4 to 3 when the hydrogen ion concentration in the solution is
 - decreased by a factor of $\frac{3}{4}$
 - decreased by a factor of 10
 - increased by a factor of $\frac{4}{3}$
 - increased by a factor of 10**
- Which statement correctly describes a solution with a pH of 9?
 - It has a higher concentration of H_3O^+ than OH^- and causes litmus to turn blue.
 - It has a higher concentration of OH^- than H_3O^+ and causes litmus to turn blue.**
 - It has a higher concentration of H_3O^+ than OH^- and causes methyl orange to turn yellow.
 - It has a higher concentration of OH^- than H_3O^+ and causes methyl orange to turn red.
- Given the following solutions:

Solution A: pH of 10
Solution B: pH of 7
Solution C: pH of 5

Which list has the solutions placed in order of increasing H^+ concentration?
 - A, B, C**
 - B, A, C
 - C, A, B
 - C, B, A
- Which indicator would best distinguish between a solution with a pH of 3.5 and a solution with a pH of 5.5
 - bromthymol blue
 - bromcresol green**
 - litmus
 - thymol blue
- According to Reference Table M, what is the color of the indicator methyl orange in a solution that has a pH of 2?
 - blue
 - yellow
 - orange
 - red**
- The ability of $\text{H}_2\text{SO}_4(\text{aq})$ to change blue litmus red is mainly due to the presence of
 - SO_2 molecules
 - H_2O molecules
 - $\text{H}_3\text{O}^+(\text{aq})$ ions**
 - $\text{SO}_4^{2-}(\text{aq})$ ions
- One alternate acid-base theory states that an acid is an
 - H^+ donor**
 - H^+ acceptor
 - OH^- donor
 - OH^- acceptor
- Given the balanced equation representing a reaction:
$$\text{NH}_3(\text{g}) + \text{H}_2\text{O}(\ell) \rightarrow \text{NH}_4^+(\text{aq}) + \text{OH}^-(\text{aq})$$
According to one acid-base theory, the $\text{NH}_3(\text{g})$ molecules act as
 - an acid because they accept H^+ ions
 - an acid because they donate H^+ ions
 - a base because they accept H^+ ions**
 - a base because they donate H^+ ions
- Which species is amphoteric (amphiprotic)?
 - H_2
 - H_2SO_4
 - HSO_4^-**
 - SO_4^{2-}

14. Given the equilibrium system:



According to the Brønsted-Lowry theory, the $\text{H}_2\text{O}(\ell)$ acts as

- A) a base, by receiving a proton
 - B) a base, by donating a proton
 - C) an acid, by receiving a proton
 - D) an acid, by donating a proton**
15. Which compound is produced when $\text{HCl}(\text{aq})$ is neutralized by $\text{Ca}(\text{OH})_2(\text{aq})$?

- A) CaCl_2** B) CaH_2
- C) HClO D) HClO_2

16. Which word equation represents a neutralization reaction?

- A) base + acid \rightarrow salt + water**
- B) base + salt \rightarrow water + acid
- C) salt + acid \rightarrow base + water
- D) salt + water \rightarrow acid + base

17. Which compound could serve as a reactant in a neutralization reaction?

- A) NaCl **B) KOH**
- C) CH_3OH D) CH_3CHO

18. During which process can 10.0 milliliters of a 0.05 M $\text{HCl}(\text{aq})$ solution be used to determine the unknown concentration of a given volume of $\text{NaOH}(\text{aq})$ solution?

- A) evaporation B) distillation
- C) filtration **D) titration**

19. Information related to a titration experiment is given in the balanced equation and table below
 $\text{H}_2\text{SO}_4(\text{aq}) + 2\text{KOH}(\text{aq}) \rightarrow \text{K}_2\text{SO}_4(\text{aq}) + 2\text{H}_2\text{O}(\ell)$

Titration Experiment Results

volume of $\text{H}_2\text{SO}_4(\text{aq})$ used	12.0 mL
concentration of $\text{H}_2\text{SO}_4(\text{aq})$?
volume of $\text{KOH}(\text{aq})$ used	36.0 mL
concentration of $\text{KOH}(\text{aq})$	0.16 M

Based on the equation and the titration results, what is the concentration of the $\text{H}_2\text{SO}_4(\text{aq})$?

- A) 0.12 M B) 0.16 M **C) 0.24 M** D) 0.96 M

20. When 50. milliliters of an HNO_3 solution is exactly neutralized by 150 milliliters of a 0.50 M solution of KOH, what is the concentration of HNO_3 ?

- A) 1.0 M **B) 1.5 M** C) 3.0 M D) 0.5 M
-

Answer Key

Unit 9 Acids and bases Do Now Worksheet

1. C
 2. D
 3. D
 4. C
 5. D
 6. B
 7. A
 8. B
 9. D
 10. C
 11. A
 12. C
 13. C
 14. D
 15. A
 16. A
 17. B
 18. D
 19. C
 20. B
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