

Acid Base Practice Test

- ___ 1. Acids taste
a. sweet. c. bitter.
b. sour. d. salty.
- ___ 2. Acids make litmus paper turn
a. red. c. blue.
b. yellow. d. black.
- ___ 3. Bases feel
a. rough. c. slippery.
b. moist. d. dry.
- ___ 4. Bases react with
a. acids to produce salts and water. c. water to produce acids and salts.
b. salts to produce acids and water. d. neither acids, salts, nor water.
- ___ 5. Which type of solution is one with a pH of 8?
a. acidic b. basic c. neutral
- ___ 6. What is the pH when the hydrogen ion concentration is $1 \times 10^{-3} \text{ M}$
a. 2 b. 2.7 c. 3 d. 3.3 e. 4
- ___ 7. A solution with a pH of 5.0 _____.
a. is basic
b. has a hydrogen-ion concentration of 5.0M
c. is neutral
d. has a hydroxide-ion concentration of $1 \times 10^{-9} \text{ M}$

Properties of Some Solutions

Solution	Electrical Conductivity of Solution	Original Color of Litmus Paper	Color of Litmus Paper After Dipping in Solution	pH
1	Very high	Red	Blue	10.0
2	Low	Blue	Red	6.5
3	Moderate	Red	Red	5.4
4	Very high	Blue	Red	2.0

- ___ 8. 29 The table shows data from an investigation designed to find a liquid solution that is both an acid and a strong electrolyte. Based on the data, a solution that is both an acid and a strong electrolyte is —
- A Solution 1
B Solution 2
C Solution 3
D Solution 4
- ___ 9. 33 Two clear solutions are placed in separate beakers. The first solution has a pH of 4, and the pH of the second solution is unknown. If the two solutions are mixed and the resulting pH is 5, the second solution must have —
- A fewer suspended solids
B a lower temperature
C more dissolved salt (NaCl) particles
D a higher concentration of OH^- ions
- ___ 10. Which of the following chemical reactions will produce a precipitate?
a. $3\text{KBr} + \text{AlPO}_4 \rightarrow \text{K}_3\text{PO}_4 + \text{AlBr}$
b. $\text{ZnCl}_2 + \text{MgSO}_4 \rightarrow \text{ZnSO}_4 + \text{MgCl}_2$
c. $\text{Na}_2\text{CO}_3 + \text{CaCl}_2 \rightarrow \text{CaCO}_3 + 2\text{NaCl}$
d. $\text{NH}_4\text{OH} + \text{KCl} \rightarrow \text{KOH} + \text{NH}_4\text{Cl}$
- ___ 11. Which of the following chemical reactions represents an acid-base reaction?
a. $\text{HBr} + \text{KOH} \rightarrow \text{KBr} + \text{H}_2\text{O}$
b. $\text{ZnCl}_2 + \text{MgSO}_4 \rightarrow \text{ZnSO}_4 + \text{MgCl}_2$
c. $\text{H}_2\text{SO}_4 + \text{CaCl}_2 \rightarrow \text{CaSO}_4 + \text{HCl}$
d. $\text{NH}_4\text{OH} + \text{KCl} \rightarrow \text{KOH} + \text{NH}_4\text{Cl}$
- ___ 12. Which of the following chemical reactions will this be $\text{Li} + \text{CaCl} \rightarrow \text{LiCl} + \text{Ca}$?
a. Acid-Base Reaction
b. Precipitate

c. Oxidation-Reduction



- _____ 13. Which statement about Arrhenius acids is FALSE?
- a. Their water solutions are called aqueous acids.
 - b. They are molecular compounds with ionizable hydrogen atoms.
 - c. Their pure aqueous solutions are electrolytes.
 - d. They increase the concentration of hydroxide ions in aqueous solution.
- _____ 14. Strong bases are
- a. strong electrolytes.
 - b. weak electrolytes.
 - c. nonelectrolytes.
 - d. also strong acids.
- _____ 15. Whose definition of acids and bases emphasizes the role of protons?
- a. Brønsted and Lowry
 - b. Lewis
 - c. Arrhenius
 - d. Faraday
- _____ 16. An electron-pair acceptor is a
- a. Brønsted-Lowry base.
 - b. Lewis acid.
 - c. Lewis base.
 - d. traditional acid.
- _____ 17. What is the pH of a 1×10^{-4} M HCl solution?
- a. 4
 - b. 6
 - c. 8
 - d. 10
- _____ 18. What is the pH of a 1×10^{-5} M KOH solution?
- a. 3
 - b. 5
 - c. 9
 - d. 11
- _____ 19. What is the molarity of an HCl solution if 50.0 mL is neutralized in a titration by 40.0 mL of 0.400 M NaOH?
- a. 0.200 M
 - b. 0.280 M
 - c. 0.320 M
 - d. 0.500
- _____ 20. Which are the correct products for these reactants $\text{HCl} + \text{NaOH} \rightarrow$
- a. $\text{HOH} + \text{ClNa}$
 - b. $\text{NaCl} + \text{H}_2\text{O}$
 - c. $\text{H}_3\text{O} + \text{NaCl}_2$
 - d. $\text{NaOH} + \text{Cl}$

a. Acid Base Practice Test
Answer Section

MULTIPLE CHOICE

- | | | | |
|-----|--------|----------|-------------|
| 1. | ANS: B | DIF: I | OBJ: 15-1.1 |
| 2. | ANS: C | DIF: I | OBJ: 15-1.1 |
| 3. | ANS: A | DIF: I | OBJ: 15-1.1 |
| 4. | ANS: C | DIF: I | OBJ: 15-1.1 |
| 5. | ANS: A | DIF: I | OBJ: 15-1.1 |
| 6. | ANS: C | DIF: II | OBJ: 15-1.2 |
| 7. | ANS: C | DIF: II | OBJ: 15-1.2 |
| 8. | ANS: B | DIF: I | OBJ: 15-1.3 |
| 9. | ANS: B | DIF: I | OBJ: 15-1.3 |
| 10. | ANS: D | DIF: I | OBJ: 15-1.3 |
| 11. | ANS: C | DIF: I | OBJ: 15-1.4 |
| 12. | ANS: A | DIF: I | OBJ: 15-1.4 |
| 13. | ANS: D | DIF: I | OBJ: 15-1.4 |
| 14. | ANS: D | DIF: I | OBJ: 15-1.5 |
| 15. | ANS: B | DIF: II | OBJ: 15-1.5 |
| 16. | ANS: D | DIF: II | OBJ: 15-1.5 |
| 17. | ANS: A | DIF: I | OBJ: 15-1.5 |
| 18. | ANS: A | DIF: I | OBJ: 15-1.5 |
| 19. | ANS: A | DIF: I | OBJ: 15-2.1 |
| 20. | ANS: C | DIF: I | OBJ: 15-2.2 |
| 21. | ANS: B | DIF: I | OBJ: 15-2.2 |
| 22. | ANS: A | DIF: I | OBJ: 15-3.1 |
| 23. | ANS: C | DIF: II | OBJ: 15-3.1 |
| 24. | ANS: A | DIF: II | OBJ: 15-3.1 |
| 25. | ANS: A | DIF: II | OBJ: 15-3.1 |
| 26. | ANS: B | DIF: II | OBJ: 15-3.1 |
| 27. | ANS: C | DIF: I | OBJ: 15-3.2 |
| 28. | ANS: A | DIF: I | OBJ: 15-3.2 |
| 29. | ANS: C | DIF: I | OBJ: 15-3.3 |
| 30. | ANS: A | DIF: I | OBJ: 16-1.1 |
| 31. | ANS: B | DIF: I | OBJ: 16-1.2 |
| 32. | ANS: A | DIF: III | OBJ: 16-1.4 |

33.	ANS:	C	DIF:	III	OBJ:	16-1.4
34.	ANS:	C	DIF:	III	OBJ:	16-1.4
35.	ANS:	A	DIF:	III	OBJ:	16-1.5
36.	ANS:	B	DIF:	I	OBJ:	16-2.2
37.	ANS:	B	DIF:	I	OBJ:	16-2.2
38.	ANS:	C	DIF:	III	OBJ:	16-2.3
39.	ANS:	B	DIF:	III	OBJ:	16-2.3
40.	ANS:	C	DIF:	III	OBJ:	16-2.3