

Chemistry : Solutions, Acids, Bases, Salts

A. Matching (Sets of 10)

- | | |
|---------------------------------------|---|
| 1. solution | [1] dissolved material in a solution |
| 2. polar | [2] separation of ions in a solution |
| 3. miscible | [3] moles per liter of solution |
| 4. air | [4] solid solution |
| 5. dissociation | [5] substance with + and - regions |
| 6. solute | [1] gaseous solution |
| 7. solvent | [2] homogeneous mixture |
| 8. molarity | [3] 2 liquids which are mutually soluble |
| 9. molality | [4] moles per kilogram of solvent |
| 10. alloy | [5] dissolving medium |
| 11. hydronium ion | [1] nitric acid |
| 12. hydroxide ion | [2] element common to most acids |
| 13. HNO_3 | [3] range of pH scale |
| 14. NaOH | [4] H_3O^+ |
| 15. hydrogen | [5] color of bromothymol blue in a base |
| 16. 0-14 | [1] products of a neutralization reaction |
| 17. pH 7 | [2] sodium hydroxide |
| 18. blue | [3] color of litmus in acid |
| 19. red | [4] neutral pH |
| 20. salt and water | [5] OH^- |
| 21. Bronsted acid (definition) | [1] inorganic acid |
| 22. Bronsted base (definition) | [2] organic acid |
| 23. HCl | [3] nonelectrolyte |
| 24. acidic solution | [4] process used to find an unknown concentration |
| 25. basic solution | [5] used because of color change properties |
| 26. indicator | [1] a proton donor |
| 27. $\text{HC}_2\text{H}_3\text{O}_2$ | [2] pH of 3 |
| 28. titration | [3] found in stomach contents |
| 29. sugar water | [4] proton acceptor |
| 30. HNO_3 | [5] pH of 10 |
| 31. acid | [1] color of litmus in a base |
| 32. base | [2] SO_2 |
| 33. yellow | [3] H_2SO_4 |
| 34. blue | [4] NaCl |
| 35. binary acid | [5] produces hydrogen ions in water |
| 36. acid anhydride | [1] pH of a strong base |
| 37. salt | [2] color of bromothymol blue in an acid |
| 38. ternary acid | [3] pH of a weak acid |
| 39. 12 | [4] produces hydroxide ions in water |
| 40. 6 | [5] HCl |

B. Multiple Choice

41. The ion product constant for water is

- | | |
|--------------------------|---------------------------|
| [1] 1.0×10^{-7} | [2] $1.0 \times 10^{+7}$ |
| [3] 1.0×10^{14} | [4] 1.0×10^{-14} |

42. The pH of a solution whose hydrogen ion concentration is 1.0×10^{-5} M is

- | | |
|--------|--------|
| [1] -5 | [2] -1 |
| [3] +5 | [4] +1 |

43. Calculate the pOH of a solution whose hydronium ion (H_3O^+) concentration is 1.5×10^{-2} M.

- | | |
|-----------|------------|
| [1] 1.82 | [2] 12.18 |
| [3] -1.82 | [4] -12.18 |

44. According to the Lewis definition an acid is an electron pair acceptor.

- | | |
|----------|-----------|
| [1] True | [2] False |
|----------|-----------|

45. The chemical reaction between an acid and a base to produce a salt and water is called

- | | |
|--------------------|--------------------|
| [1] emulsification | [2] neutralization |
| [3] dissociation | [4] ionization |

46. What is the hydrogen ion concentration of a 2.0 M solution of HCl that is 100 % ionized?

- | | |
|------------|-----------|
| [1] 2.0 M | [2] 20 M |
| [3] 0.02 M | [4] 0.2 M |

47. What is the hydrogen ion concentration of a 0.025 M solution of acetic acid that is 25% ionized?

- | | |
|---------------|--------------|
| [1] 0.025 M | [2] 0.25 M |
| [3] 0.00625 M | [4] 0.0625 M |

48. What is the pH of the solution in problem # 47?

- | | |
|---------|----------|
| [1] 2.2 | [2] 11.8 |
| [3] 1.6 | [4] 1.2 |

49. What is the pOH of the solution in problem #47?

- | | |
|----------|----------|
| [1] 12.4 | [2] 12.8 |
| [3] 11.8 | [4] 2.2 |

50. $\text{pH} + \text{pOH} = 14$

- | | |
|----------|-----------|
| [1] True | [2] False |
|----------|-----------|