1. Calculate the molarity of a solution made by dissolving 23.4g of sodium sulfate in enough water to form 125ml of solution?
2. 2.62M
3. 1.32M
4. 4.24M
5. 0.18M
6. 1.87M
7. The average adult human male has a total blood volume of 5.0L. If the concentration of sodium ion in this average individual is 0.135M, What is the mass of sodium ion circulating in the blood?
8. 25g
9. 22.9g
10. 15.5g
11. 30g
12. 7.5g
13. What mass of lithium nitrate would have to be dissolved in 30.0 g of water in order to make an 18.0% solution?
14. 12.4g
15. 2.45g
16. 5.86g
17. 6.59g
18. 9.73g
19. What is the molarity of a solution that contains 390.0 g of acetic acid, CH3COOH, dissolved in enough acetone to make 1000.0 mL of solution?
20. 8.73g
21. 2.34g
22. 6.49g
23. 1.23g
24. 5.23g
25. What mass of ammonium chloride is dissolved in 300. mL of a 0.875 M solution?
26. 14.0g
27. 28.0g
28. 7.0g
29. 3.5g
30. 12.0g
31. Describe what you would do to prepare 100.0 g of a 3.5% solution of ammonium sulfate in water.
32. 0.035g (NH4)2SO4 in 100g H2O
33. 3.5g (NH4)2SO4 in 100g H2O
34. 3.5g (NH4)2SO4 in 1g H2O
35. 3.5g (NH4)2SO4 in 96.5ml H2O
36. 0.35g (NH4)2SO4 in 100g H2O
37. What mass of barium nitrate is dissolved in 21.29 mL of a 3.38 M solution?
38. 261.37g
39. 25.34g
40. 18.8g
41. 130.5g
42. 15.34g

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| 1 | B |
| 2 | C |
| 3 | D |
| 4 | C |
| 5 | A |
| 6 | D |
| 7 | C |

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| 1. | In a KCl Solution, water is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and Potassium Chloride is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | |
| A) | Solute, Solution |
| B) | Solute, Solvent |
| C) | Solvent, Solute |
| D) | Solvent, Solution |
| E) | Solution, Solute |

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| 2. | An oven-cleaning solution is 40.0% (by mass) NaOH. If one jar of this product contains 465 g of solution, how much NaOH does it contain? | |
| A) | 1.16  103 g |
| B) | 11.6 g |
| C) | 186 g |
| D) | 18.6 g |
| E) | none of these |

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| 3. | A 118.2-g sample of nitric acid solution that is 70.0% HNO3 (by mass) contains | |
| A) | 82.7 mol HNO3 |
| B) | 1.31 mol HNO3 |
| C) | 1.88 mol HNO3 |
| D) | 5.21  103 mol HNO3 |
| E) | none of these |

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| 4. | You have two solutions of sodium chloride. One is a 2.00 *M* solution, the other is a 4.00 *M* solution. You have much more of the 4.00 *M* solution, and you add the solutions together. Which of the following could be the concentration of the final solution? | |
| A) | 2.60 *M* |
| B) | 3.00 *M* |
| C) | 3.80 *M* |
| D) | 6.00 *M* |
| E) | 7.20 *M* |

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| 5. | A 60.7-g sample of SrCl2 is dissolved in 112.5 mL of solution. Calculate the molarity of this solution. | |
| A) | 0.383 *M* |
| B) | 3.40 *M* |
| C) | 0.0431 *M* |
| D) | 4.72 *M* |
| E) | none of these |

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| 6. | What volume of 12.0 *M* nitric acid is required to prepare 6.67 L of 0.100 *M* nitric acid? | |
| A) | 0.180 L |
| B) | 18.0 L |
| C) | 0.667 L |
| D) | 0.0556 L |
| E) | 1.80 L |

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| 7. | What volume of 13.1 *M* H2SO4 is required to prepare 12.0 L of 0.156 *M* sulfuric acid? (Ignore significant figures for this problem.) | |
| A) | 170 mL |
| B) | 2.04 L |
| C) | 84 mL |
| D) | 143 mL |
| E) | 1.01 L |

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| 8. | Determine the molarity of a solution containing 6.92 g BaCl2 in 750.0 mL of solution. | |
| A) | 3.32  10-2 M |
| B) | 2.49  10-2 M |
| C) | 9.23  10-3M |
| D) | 4.43  10-2 M |
| E) | 9.23 M |

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| 9. | What is the molarity of a HNO3 solution prepared by adding 164.8 mL of water to 350.0 mL of 12.3 M HNO3? | |
| A) | 26.1 M |
| B) | 6.33 M |
| C) | 8.36 M |
| D) | 2.22 M |
| E) | 2.03 M |

**Answer Key**

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| 1. | C |
| 2. | C |
| 3. | B |
| 4. | C |
| 5. | B |
| 6. | D |
| 7. | D |
| 8. | D |
| 9. | C |

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