Assignment 1

The assignment is due by the following date and time:

Due on: 09-04-2013, 23:00:00

1. How does mixing water with sodium hydroxide solution form an explosive mixture?
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2. List the factors that affect the rate of a reaction.
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3. How does the concentration of a reactant affect the rate of a reaction?
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4. What is the effect of temperature on the rate of a reaction?
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5. How does the surface area of a reactant affect the rate of a reaction?
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6. Explain the concept of a catalyst and its role in a reaction.
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7. Define the term “activation energy” in the context of a reaction.
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8. What is the significance of the Arrhenius equation in reaction kinetics?
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9. Discuss the role of enzymes in biological reactions.
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10. Explain the concept of a buffer system in maintaining pH stability.
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11. How does pH affect the solubility of a compound?
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12. What is the significance of pH in biological systems?
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13. Explain the concept of pH and its measurement.
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14. Discuss the importance of pH in acid-base balance.
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15. What are the implications of pH changes in clinical settings?
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16. Explain the concept of pH regulation in physiological processes.
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17. Describe the role of pH in the functioning of enzymes.
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18. Discuss the significance of pH in the treatment of medical conditions.
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19. How does pH affect the solubility of gases in water?
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20. Explain the concept of solubility and its relationship with pH.
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21. Discuss the factors that influence the solubility of a gas in water.
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22. How does temperature affect the solubility of a gas in water?
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23. Explain the concept of Henry’s law in the context of gas solubility.
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24. Discuss the role of pressure in the dissolution of gases.
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25. What is the practical application of the Henry’s law in industrial processes?
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26. Explain the concept of solubility in aqueous solutions.
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27. Discuss the factors that influence the solubility of substances in water.
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28. How does the presence of other substances affect the solubility of a compound?
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29. Explain the concept of saturation and its significance in solution chemistry.
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30. Discuss the relationship between the concentration of a solute and its solubility.
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31. What is the significance of the solubility product constant in chemical equilibria?
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32. Explain the concept of the solubility product constant and its application.
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33. Discuss the factors that influence the solubility product constant.
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34. How does temperature affect the solubility product constant?
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35. Explain the concept of the common ion effect in solution chemistry.
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36. Discuss the role of common ions in the solubility of compounds.
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37. How does the presence of common ions affect the solubility of a compound?
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38. Explain the concept of the colligative properties of solutions.
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39. Discuss the factors that influence the colligative properties of solutions.
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40. How does temperature affect the colligative properties of solutions?
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41. Explain the concept of osmosis and its significance in biological systems.
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42. Discuss the factors that influence the rate of osmosis.
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43. How does temperature affect the rate of osmosis?
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44. Explain the concept of osmotic pressure and its measurement.
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45. Discuss the factors that influence the osmotic pressure of a solution.
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46. How does temperature affect the osmotic pressure of a solution?
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47. Explain the concept of the diffusion of gases and its significance in biological systems.
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48. Discuss the factors that influence the rate of diffusion.
    - 

49. How does temperature affect the rate of diffusion?
    - 

50. Explain the concept of the diffusion coefficient and its measurement.
    - 

51. Discuss the factors that influence the diffusion coefficient.
    - 

52. How does temperature affect the diffusion coefficient?
    - 

53. Explain the concept of the diffusion of liquids and its significance in industrial processes.
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54. Discuss the factors that influence the rate of diffusion of liquids.
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55. How does temperature affect the rate of diffusion of liquids?
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56. Explain the concept of the diffusion coefficient of liquids and its measurement.
    - 

57. Discuss the factors that influence the diffusion coefficient of liquids.
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58. How does temperature affect the diffusion coefficient of liquids?
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59. Explain the concept of the diffusion of solids and its significance in various applications.
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60. Discuss the factors that influence the rate of diffusion of solids.
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61. How does temperature affect the rate of diffusion of solids?
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62. Explain the concept of the diffusion coefficient of solids and its measurement.
    - 

63. Discuss the factors that influence the diffusion coefficient of solids.
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64. How does temperature affect the diffusion coefficient of solids?
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65. Explain the concept of the diffusion of microporous materials and its significance in various applications.
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66. Discuss the factors that influence the rate of diffusion through microporous materials.
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67. How does temperature affect the rate of diffusion through microporous materials?
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68. Explain the concept of the diffusion coefficient through microporous materials and its measurement.
    - 

69. Discuss the factors that influence the diffusion coefficient through microporous materials.
    - 

70. How does temperature affect the diffusion coefficient through microporous materials?
    - 

71. Explain the concept of the diffusion of gases through membranes and its significance in various applications.
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72. Discuss the factors that influence the rate of diffusion through membranes.
    - 

73. How does temperature affect the rate of diffusion through membranes?
    - 

74. Explain the concept of the diffusion coefficient through membranes and its measurement.
    - 

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94. How does temperature affect the diffusion coefficient through membranes?
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95. Explain the concept of the diffusion of gases through microporous membranes and its significance in various applications.
    - 

96. Discuss the factors that influence the rate of diffusion through microporous membranes.
    - 

97. How does temperature affect the rate of diffusion through microporous membranes?
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98. Explain the concept of the diffusion coefficient through microporous membranes and its measurement.
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99. Discuss the factors that influence the diffusion coefficient through microporous membranes.
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100. How does temperature affect the diffusion coefficient through microporous membranes?
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