Chemistry
Assessment #21: Concentration of Solutions PRACTICE

For each of the following questions or statements, select the most appropriate response and write its letter on the answer line:

_____ 1. What is the concentration of a sodium chloride solution prepared by dissolving 0.159 moles of NaCl in sufficient water to give 350 mL of solution?
   A. 0.16 M
   B. 0.45 M
   C. 18 M
   D. 27 M

_____ 2. What is the molarity of an aqueous solution containing 22.5 g of sucrose ($C_{12}H_{22}O_{11}$) in 35.5 mL of solution?
   A. 0.0657 M
   B. 0.104 M
   C. 1.85 M
   D. 3.52 M

_____ 3. How many grams of NaOH are there in 500.0 mL of a 0.175 M NaOH solution?
   A. 2.19×10^{-3} g
   B. 3.50 g
   C. 14.0 g
   D. 114 g

_____ 4. How many grams of H_3PO_4 are in 175 mL of a 3.5 M solution of H_3PO_4?
   A. 0.61 g
   B. 4.9 g
   C. 20. g
   D. 60. g

_____ 5. What is the concentration of an aqueous methanol solution produced when 0.200 L of a 2.00 M solution was diluted to 0.800 L?
   A. 0.200 M
   B. 0.400 M
   C. 0.500 M
   D. 0.800 M

_____ 6. What volume of a concentrated solution of potassium hydroxide (6.00 M) must be diluted to 200. mL to make a 0.880 M solution of potassium hydroxide?
A. 26.4 mL
B. 29.3 mL
C. 50.0 mL
D. 176 mL

_____ 7. What is the molarity of a solution prepared by diluting 43.72 mL of 5.005 M aqueous $K_2Cr_2O_7$ to 500. mL?
A. 0.0044 M
B. 0.0879 M
C. 0.438 M
D. 0.870 M

_____ 8. A solution contains 28% phosphoric acid by mass. This means that:
A. 1 mL of this solution contains 28 g of phosphoric acid
B. 1 L of this solution has a mass of 28 g
C. 100 mL of this solution contains 28 g of phosphoric acid
D. 1 L of this solution contains 28 mL of phosphoric acid

_____ 9. What is the concentration in % (m/v) of a NaCl solution prepared by dissolving 9.3 g of NaCl in sufficient water to give 350 mL of solution?
A. 0.455% (m/v)
B. 2.66% (m/v)
C. 3.26% (m/v)
D. 37.6% (m/v)

_____ 10. As more salt is dissolved in water, what will happen to the boiling point of that solution?
A. it will decrease
B. it will stay the same
C. it will increase
D. it will not be measurable

Answers:
1. B
2. C
3. B
4. D
5. C
6. B
7. C
8. C
9. B
10. C