

Chemistry Final Exam Part II
5-31-07

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- ____ 55. What is the molarity of a solution that contains 0.202 mol KCl in 7.98 L of solution?
a. 0.0132 M c. 0.459 M
b. 0.0253 M d. 1.363 M
- ____ 56. Dissolved in water to make 100 mL of solution, 1.00 g of NaCl would have a concentration of
a. 1.71 M. c. 0.0171 M.
b. 0.171 M. d. 17.1 M.
- ____ 57. Which of the following is soluble in water?
a. potassium nitrate c. benzene
b. silver d. carbon tetrachloride
- ____ 58. In a solution at equilibrium,
a. no dissolution occurs.
b. the rate of dissolution is less than the rate of crystallization.
c. the rate of dissolution is greater than the rate of crystallization.
d. the rate of dissolution and the rate of crystallization are equal.
- ____ 59. Pressure has the greatest effect on the solubility of
a. solids in liquids. c. gases in gases.
b. liquids in liquids. d. gases in liquids.
- ____ 60. Why is boiling-point elevation a colligative property?
a. It is inversely proportional to the concentration of particles in a solution.
b. It is directly proportional to the concentration of particles in a solution.
c. It does not depend on the concentration of particles.
d. It is independent of changes in vapor pressure.
- ____ 61. Nonvolatile solutes
a. depress the freezing point and elevate the boiling point.
b. elevate the freezing point and depress the boiling point.
c. depress both the freezing point and the boiling point.
d. elevate both the freezing point and the boiling point.
- ____ 62. Molecules that have both polar and nonpolar regions
a. are likely to be flammable. c. will not dissolve in any solvent.
b. could act as emulsifying agents. d. are unstable.

- _____ 63. How does a gas expand?
- Its particles become larger.
 - Collisions between particles become elastic.
 - Its temperature rises.
 - Its particles move farther apart.
- _____ 64. The kinetic-molecular theory states that gas particles are very far apart. This idea explains of a gas:
- the fluidity
 - the compressibility
 - the fluidity and compressibility
 - neither the fluidity nor the compressibility
- _____ 65. Which of the following is *not* a property of gases?
- gases are fluids
 - gases have a low density
 - gases have a definite volume that does not vary from container to container
 - gases are compressible
- _____ 66. According to the kinetic-molecular theory, gas particles
- are in constant motion.
 - have different shapes.
 - have different colors.
 - are in contact with each other.
- _____ 67. A sample of a gas has a volume of 150 mL when its pressure is 0.947 atm. What will the volume of the gas be at a pressure of 0.987 atm, if the temperature remains constant?
- 140 mL
 - 144 mL
 - 152 mL
 - 156 mL
- _____ 68. A sample of a gas occupies a volume of 752 mL at 25°C. What volume will the gas occupies if the temperature increases to 50°C, if the pressure remains constant?
- 376 mL
 - 694 mL
 - 815 mL
 - 1500 mL
- _____ 69. A sample of a gas has a pressure of 3.00 atm at 25°C. What would the gas pressure be at 52°C, if the volume remains constant?
- 1.44 atm
 - 2.75 atm
 - 3.27 atm
 - 6.24 atm
- _____ 70. A 1.00 L sample of a gas has a mass of 1.92 g at STP. What is the molar mass of the gas?
- 1.92 g/mol
 - 19.2 g/mo
 - 22.4 g/mol
 - 43.0 g/mol

- ____ 71. Strong acids are
- a. strong electrolytes.
 - b. weak electrolytes.
 - c. nonelectrolytes.
 - d. nonionized.
- ____ 72. Pure water contains
- a. water molecules only.
 - b. hydronium ions only.
 - c. hydroxide ions only.
 - d. water molecules, hydronium ions, and hydroxide ions.
- ____ 73. The pH of a solution is 10. What is its OH⁻ concentration?
- a. 1.00×10^{-10} M
 - b. 1.00×10^{-7} M
 - c. 1.00×10^{-4} M
 - d. 10 M
- ____ 74. What is the pH of a 1×10^{-5} M KOH solution?
- a. 3
 - b. 5
 - c. 9
 - d. 11
- ____ 75. What is the molarity of an NaOH solution if 3.47 mL is titrated by 11.1 mL of 0.0904 M HNO₃?
- a. 0.289 M
 - b. 0.355 M
 - c. 0.460 M
 - d. 0.620 M