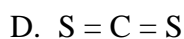
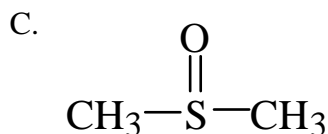
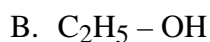
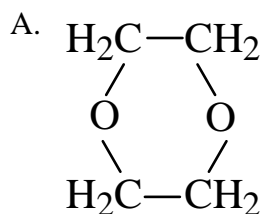


Chapter 12 practice test

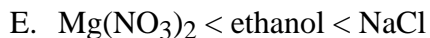
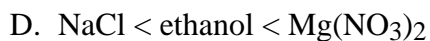
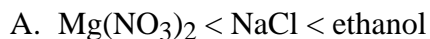
- The solubility of gases in water usually decreases with
  - increasing pressure.
  - increasing temperature.
  - decreasing temperature.
- What is the freezing point of a solution prepared from 50.0 g ethylene glycol ( $\text{C}_2\text{H}_6\text{O}_2$ ) and 85.0 g  $\text{H}_2\text{O}$ ?  $K_f$  of water is  $1.86^\circ\text{C}/\text{m}$ 
  - $17.6^\circ\text{C}$
  - $-176^\circ\text{C}$
  - $-1.50^\circ\text{C}$
  - $1.50^\circ\text{C}$
  - $-17.6^\circ\text{C}$
- Calculate the molality of a solution containing 14.3 g of NaCl in 42.2 g of water.
  - $2.45 \times 10^{-4} \text{ m}$
  - $5.80 \times 10^{-4} \text{ m}$
  - $2.45 \times 10^{-1} \text{ m}$
  - 5.79 m
  - 103 m
- The solubility of  $\text{CO}_2$  gas in water
  - increases with increasing gas pressure.
  - increases with decreasing gas pressure.
  - decreases with increasing gas pressure.
  - is not dependent on pressure.
- Consider a 0.90 M  $\text{Al}(\text{NO}_3)_3$  solution. This solution has a nitrate ion concentration of
  - 0.30 M
  - 0.90 M
  - 0.0 M
  - 8.1 M
  - 2.7 M
- Which of the following aqueous solutions has the highest boiling point? Given  $K_b$  for water is  $0.52^\circ\text{C}/\text{m}$ 
  - 0.2 m KCl
  - 0.2 m  $\text{Na}_2\text{SO}_4$
  - 0.2 m  $\text{Ca}(\text{NO}_3)_2$
  - A and B.
  - B and C.

Chapter 12 practice test

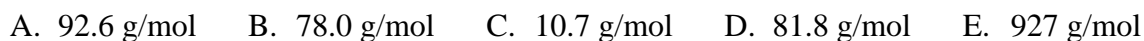
7. Which one of the following would be immiscible with water?



8. Arrange the following aqueous solutions in order of increasing boiling points: 0.050 m  $\text{Mg}(\text{NO}_3)_2$ ; 0.100 m ethanol; 0.090 m  $\text{NaCl}$ .



9. What is the molar mass of toluene if 0.85 g of toluene depresses the freezing point of 100 g of benzene by  $0.47^\circ\text{C}$ ?  $K_f$  of benzene is  $5.12^\circ\text{C}/\text{m}$ .



10. Dissolving a solute such as  $\text{KOH}$  in a solvent such as water results in

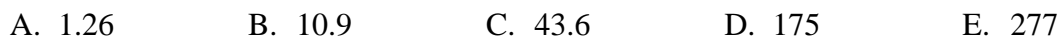
A. an increase in the melting point of the liquid.

B. a decrease in the boiling point of the liquid.

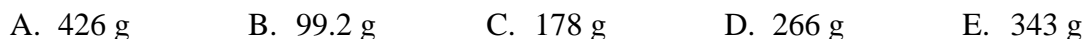
C. a decrease in the vapor pressure of the liquid.

D. no change in the boiling point of the liquid.

11. A solution that contains 55.0 g of ascorbic acid (Vitamin c. in 250 g of water freezes at  $-2.34^\circ\text{C}$ . Calculate the molar mass (g/mol) of the solute.  $K_f$  of water is  $1.86^\circ\text{C}/\text{m}$ .



12. When 12.1 g of the sugar sucrose (a nonelectrolyte) are dissolved in exactly 800 g of water, the solution has a freezing point of  $-0.082^\circ\text{C}$ . What is the molar mass of sucrose according to the data?  $K_f$  of water is  $1.86^\circ\text{C}/\text{m}$ .



Chapter 12 practice test

13. Calculate the percent by mass of potassium nitrate in a solution made from 45.0 g  $\text{KNO}_3$  and 295 mL of water. Density of water is 0.997 g/mL.
- A. 1.51%      B. 7.57%      C. 13.3%      D. 15.2%      E. none of them
14. Which of the following liquids would make a good solvent for iodine,  $\text{I}_2$ ?
- A. HCl      B.  $\text{H}_2\text{O}$       C.  $\text{CH}_3\text{OH}$       D.  $\text{NH}_3$       E.  $\text{CS}_2$
15. In how many grams of water should 25.31 g of potassium nitrate ( $\text{KNO}_3$ ) be dissolved to prepare a 0.1982 m solution?
- A. 250.0 g      B. 792 g      C. 1,000 g      D. 1,263 g      E. 7,917 g

Chapter 12 practice test

**Answer Key for Test "ch12pretest.tst", 4/8/2005**

No. in Q-Bank	No. on Test	Correct Answer
12-19	1	B
12-33	2	E
12-13	3	D
12-23	4	A
12-43	5	E
12-29	6	E
12-1	7	D
12-48	8	B
12-35	9	A
12-27	10	C
12-34	11	D
12-40	12	E
12-10	13	C
12-3	14	E
12-12	15	D