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1. **013 Chapter #040**

Which of the following is not a colligative property?

Student Response

a. vapor pressure lowering

b. atmospheric pressure

c. boiling point elevation

d. osmotic pressure

e. freezing point depression

2. **013 Chapter #070**

What is the osmotic pressure of a solution that contains 13.7 g of propyl alcohol (C_3H_7OH) dissolved in enough water to make 500. mL of solution at $27^\circ C$?

Student Response

a. 9.7 atm

b. 33.7 atm

c. 0.4 atm

d. 5.6 atm

e. 11.2 atm

3. **013 Chapter #020**

What is the percent CsCl by mass in a 0.711 M aqueous CsCl solution that has a density of 1.091 g/mL?

Student Response

a. $3.87 \times 10^{-4}\%$

b. $3.87 \times 10^{-1}\%$

c. 11.0%

d. 1.1%

e. $6.5 \times 10^{-2}\%$

4. **013 Chapter #050**

Diethyl ether has a vapor pressure of 400.0 torr at 18°C. When a sample of benzoic acid is dissolved in ether, the vapor pressure of the solution is 342 torr. What is the mole fraction of benzoic acid in the solution?

| Student Response |
|--------------------------------------|
| a. 0.0169 |
| b. 0.0197 |
| c. 0.145 |
| d. 0.855 |
| e. None of these choices is correct. |

5. **013 Chapter #024**

What volume of concentrated (14.7 M) phosphoric acid is needed to prepare 25.0 L of 3.0 M H_3PO_4 ?

| Student Response |
|------------------|
| a. 0.20 L |
| b. 0.57 L |
| c. 1.8 L |
| d. 3.6 L |
| e. 5.1 L |

6. **013 Chapter #060**

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 H_2O ? K_f of water is $1.86^\circ\text{C}/\text{m}$.

| Student Response |
|--------------------------|
| a. 17.6°C |
| b. -176°C |
| c. -1.50°C |
| d. 1.50°C |
| e. -17.6°C |

7. **013 Chapter #001**

What name is given to the minor component in a solution and the "stuff" being dissolved?

| Student Response |
|------------------|
|------------------|

- a. solvent
- b. unsaturated
- c. saturated
- d. solute
- e. supersaturated

8. 013 Chapter #010

Which response lists all the following pairs that are miscible liquids?

Pair # 1. octane (C₈H₁₈) and water

Pair # 2. acetic acid (CH₃COOH) and water

Pair # 3. octane (C₈H₁₈) and carbon tetrachloride(CCl₄)

- | Student Response |
|------------------|
| a. 1, 3 |
| b. 1, 2 |
| c. 3 |
| d. 2 |
| e. 2, 3 |

9. 013 Chapter #030

Cadmium bromide is used in photography and lithography. Calculate the molality of a solution prepared by dissolving 45.38 g of CdBr₂ in 375.0 g of water.

- | Student Response |
|--------------------------------------|
| a. 0.03035 <i>m</i> |
| b. 0.01600 <i>m</i> |
| c. 0.1210 <i>m</i> |
| d. 0.4446 <i>m</i> |
| e. None of these choices is correct. |

10. 013 Chapter #080

An "ideal solution" is a solution that obeys Raoult's law.

- | Student Response |
|------------------|
| a. TRUE |
| b. FALSE |