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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°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<sub>3</sub>PO<sub>4</sub>?

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 (C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>) and 85.0 g H<sub>2</sub>O? K<sub>f</sub> of water is 1.86°C/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
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- 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 (C<sub>8</sub>H<sub>18</sub>) and water

Pair # 2. acetic acid (CH<sub>3</sub>COOH) and water

Pair # 3. octane (C<sub>8</sub>H<sub>18</sub>) and carbon tetrachloride(CCl<sub>4</sub>)

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 CdBr<sub>2</sub> 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