SID [ ][ ][ ][ ][ ][ ][ ]   Last Key   First Answer

Question 1
5 Points

An aqueous solution is **16.5% by mass silver(I) nitrate**. What is the **mole fraction** of **silver(I) nitrate** in the solution?

Must Show Work for Full Credit
Use the following Atomic Weights ($g.mol^{-1}$):- Ag 107.87; N 14.01; O 16.00; H 1.01

Assume 100g ∴ 16.5g $AgNO_3$,   83.5g H_2O
                              MM = 169.88   MM = 18.02

$$\frac{16.5g\ AgNO_3 \mid 1\ mol}{\mid 169.88} = 0.0971 \qquad \frac{83.5g\ H_2O \mid 1\ mol}{\mid 18.02} = 4.63$$

$$X = \frac{0.0971}{0.0971 + 4.63} = 0.0205$$

$$\underline{2.05 \times 10^{-2}}$$

Question 2
3 Points

Match the following aqueous solutions with the appropriate letter from the column on the right. **Assume complete dissociation of electrolytes.**

__A__ 0.25 m $CrSO_4$ $i = 2$

__C__ 0.15 m $CuCl_2$ $i = 3$

__B__ 0.12 m $Fe(NO_3)_3$ $i = 4$

__D__ 0.44 m Glucose (**nonelectrolyte**)

A. **Highest** boiling point

B. **Second highest** boiling point

C. **Third highest** boiling point

D. **Lowest** boiling point

Question 3
2 Points

The **Vapor Pressure** of 4 substances was measured at **25°C** and they were found to be
143.0 mmHg,   67.9 mm Hg,   151.7 mmHg,   514.4 mmHg
The four substances measured are given below. Which one of the four **would you anticipate** having the **Vapor Pressure of 151.7 mm Hg**?

☐ CH_3OH

⊙ C_6H_{14}

☐ C_5H_{12}

☐ CH_3CH_2OH