Quiz 1
Name ____________________________
Chem 121, Section 1

1. (2 pts) What are two ways to earn extra credit in this class?
   i) ATTENDING CHEMISTRY SEMINARS AND WRITING REPORTS
   ii) PROVIDING HELPFUL INFORMATION ON THE CAPA DISCUSSION PAGE ON CHEMBRD

2. (1 pt) How many hour exams will there be? (This does NOT include the final.)
   TWO

3. (1 pt) The final exam in this course will be written by:
   a) Dr. Krueger
   b) Drs. Brown, Krueger, and Peaslee as a team
   c) Every professor in the chemistry department as a team
   d) The American Chemical Society
   e) None of the above

4. (1 pt) The final exam will cover
   a) Just the second semester
   b) Just the first semester
   c) Both semesters

5. (5 pts) Determine the mole fraction (X) of ammonia in a 14.8 M solution of ammonia in water. Assume the density of the solution is 0.898 g/ml.

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   \begin{align*}
   14.8 \text{ moles of } \text{NH}_3 & \text{ per } 1 \text{ L of solution} \\
   1000 \text{ mL} \times (0.898 \text{ g/mL}) &= 898 \text{ g of solution} \\
   14.8 \text{ moles } \text{NH}_3 \times (17.0 \frac{\text{g}}{\text{mol}}) &= 251.6 \text{ g } \text{NH}_3 \\
   898 \text{ g total mass} - 251.6 \text{ g } \text{NH}_3 &= 646.4 \text{ g } \text{H}_2\text{O} \\
   646.4 \text{ g } \text{H}_2\text{O} \times (\frac{\text{mol}}{18.08 \text{ g}}) &= 35.91 \text{ mol water}
   \end{align*}
   \]

   Moles fraction \( \text{NH}_3 = \frac{14.8}{14.8 + 35.91} = 0.292 \)