

Unit 7 Free Response Questions

Your class will select three questions from the following set that you must answer. Your answer to each question is worth a maximum of ten points each. Points are earned in the following ways:

As many as 3 pts: English writing conventions – the student writes complete sentences with proper punctuation and grammar. The question is restated in the context of the answer.

As many as 4 pts: The answer addresses the question that was asked. Required examples, explanations and illustrations are provided, though they might not be correct.

As many as 3 pts: The answer is conceptually correct.

1. You did a lab on conductivity of solutions. Explain what allowed some solutions to conduct electricity while others did not. What was present in a conducting solution that was not present in a non - conducting solution?
2. Explain why grease dissolves in gasoline, but not in water. What type of solvent is gasoline? What type of solvent is water? What kinds of compounds WOULD dissolve well in water?
3. Write a word equation for a neutralization reaction. Write the formula equation, including one acid and one base that could participate in a neutralization reaction, and the products that would result from the neutralization.
4. Determine the molarity of the solutions in the table below (*Show your work*). Write a sentence that puts the solutions in order from least concentrated to most concentrated. Does having more solute mean that a solution will be more concentrated? Why or why not?

| Solute | Mass of solute (g) | Volume of solution (L) |
|------------------|--------------------|------------------------|
| NaOH | 40 | 100 |
| BeF ₂ | 47 | 10 |
| CO ₂ | 22 | 1 |

5. You are trying to make a sugar water solution, but even after 5 hours the sugar just won't dissolve. Describe at least two things you could do increase the solubility of the sugar. Would these same techniques work if you were trying increase the solubility of a gas? Why or why not?
6. Describe the formation of a salt like NaCl. What do we call the different parts of this compound and how do they play a role in its solubility in water? Include a drawing of how water would interact with and dissolve this compound.