

TOPIC 10 PRACTICE EXAM

I did not make an answer key to this. If you are unsure of yourself, this is a diagnostic to encourage you to go back into the lessons and review those topics.

1. If a 45.1 g solution contains 0.066 g of NaCl, what is the percent composition of the solute?
2. What is the percent composition of KCl when you dissolve 11.3 grams of it in 46.88 grams of water?
3. What is the percent composition of 1.29 moles of hydrogen fluoride in a 85 gram solution.
4. If you add 0.55 mol of NaO₂ to 121 grams of solvent, what would be the percent composition of this solution?
5. What is the molarity of 6.0 mols NaOH in a 2.5 liter solution?
6. If you have a 1.5 molar solution of HCl, how many moles would be in a 1.75 liter sample?
7. How many grams of NaOH would you need to make a 0.55 liter, 2.0 molar solution in water?
8. How many moles of NaCl would be in a 4.7 liter solution that has a molarity of 3.5?
9. What is the molarity of a 6.3 mol HNO₃ solution in a 1.5 liter solution?
10. Water is a _____ compound and the oxygen side has a _____ charge.
11. If a gas has the solubility of 0.088 g/L at 1.0 atm of pressure, what would the new solubility be at 0.75 atm of pressure?
12. If 1.72 g of gas at 77.3 kPa pressure dissolves in 1.0 liters of water at 29°C, how much will dissolve in 1.0 liters of water at 12.7 kPa pressure at the same temperature?
13. The substance that dissolves in a solution is known as the:
14. What is the name of the substance that dissolves the solute in a solution?
15. A mixture of solute and solvent is known as a(n):
16. If a molecule has an uneven distribution of electron density, it is best described as:
17. The weak bond that is formed between two water molecules is called:
18. When you decrease the pressure on a solution what happens to the solubility of dissolved gasses in it?
19. Which of the following 1.0 M aqueous solutions has the highest boiling point? C₆H₁₂O₆, KBr, NaCl, CaCl₂, or NaNO₃
20. What is the boiling point of a 1.5 m solution of NaCl in water? (The boiling point elevation constant, k_b , for water is 0.5 °C/m)
21. A solution contains equal masses of glucose (molar mass 180) and toluene (molar mass 90). What is the mole fraction of glucose in the solution?
22. Van't Hoff Factor for the following solutions: Calcium nitrate, CuC₂H₃O₂, C₁₂H₂₄O₁₂, sodium bicarbonate (baking soda), Na₃PO₄, C₂H₅OH, Potassium carbonate, NH₄NO₃, Fe₂(SO₄)₃
23. What are the units for Molarity (M), Density, and Molality (m)?