

Understanding Solutions: Concentration, Solubility, and Chemical Properties

Chemistry · Answer Key · 15 Questions

1. What formula is used to calculate percent by mass (% m/m)?

- A) $(\text{Mass of Solute} / \text{Mass of Solution}) \times 100$**
- B) $(\text{Volume of Solute} / \text{Volume of Solution}) \times 100$
- C) $(\text{Mass of Solute} / \text{Volume of Solution}) \times 100$
- D) $(\text{Mass of Solute} / \text{Total Mass of Solvent}) \times 100$

2. Which type of solution contains the maximum amount of solute that can dissolve at a specific temperature?

- A) Unsaturated
- B) Saturated**
- C) Supersaturated
- D) Dilute

3. What is the characteristic taste of acids?

- A) Bitter
- B) Salty
- C) Sour**
- D) Sweet

4. What color does blue litmus paper turn when dipped in an acid?

- A) Green
- B) Blue
- C) Yellow
- D) Red**

5. Which ions do bases produce when dissolved in water?

- A) H^+
- B) OH^-**
- C) Na^+
- D) Cl^-

6. On the pH scale, what range represents a basic solution?

- A) $\text{pH} < 7$
- B) $\text{pH} = 7$
- C) $\text{pH} > 7$**
- D) $\text{pH} = 0$

7. What is the result of a neutralization reaction between an acid and a base?

- A) Salt and Hydrogen
- B) Salt and Water**
- C) Acid and Metal
- D) Oxygen and Salt

8. What does the phrase 'like dissolves like' refer to in chemistry?

- A) Temperature and pressure
- B) Polarity of solute and solvent**
- C) The mass of the ingredients
- D) The color of the solution

9. What is a supersaturated solution?

- A) A stable solution with minimal solute
- B) A solution containing more solute than normally possible**
- C) A solution that cannot take more solute
- D) A solution with no solute

10. Which of these is an example of an indicator that changes color in acids and bases?

- A) Sodium Chloride
- B) Litmus**
- C) Hydrogen gas
- D) Water

11. How does increasing the temperature generally affect the solubility of solids in liquids?

- A) It decreases solubility
- B) It has no effect
- C) It increases solubility**
- D) It makes the solution unstable

12. What is the unit for mass per volume concentration?

- A) g/mL or g/L**
- B) % m/m
- C) mL/g
- D) g/g

13. Which substance is commonly used in car batteries and is classified as an acid?

- A) Sodium hydroxide
- B) Sulphuric acid**
- C) Calcium carbonate
- D) Ammonium hydroxide

14. What happens if you add more solute to an unsaturated solution?

- A) It will crystallize
- B) It will not dissolve
- C) It will dissolve**
- D) It will turn into a salt

15. Which property is characteristic of a base?

- A) Slippery to touch**
- B) Sour taste
- C) Turns blue litmus red
- D) Reacts with metals to produce hydrogen