Questions

1. **MCQ:** A homogeneous mixture composed of one or more substances dissolved in another substance is called a: a) Solute b) Suspension c) **Solution** d) Precipitate
2. **SAQ:** What is the specific term for the substance that is dissolved in a liquid solvent?
3. **MCQ:** To determine the number of moles (n) in a given quantity of a substance, you should divide the given quantity by: a) Avogadro's number b) **Molecular weight** c) Volume (L) d) Concentration (c)
4. **SAQ:** What is the abbreviation for moles?
5. **MCQ:** Molarity (M) indicates the number of moles of solute dissolved in what quantity of solution? a) 1 gram b) **1 litre** c) 100 millilitres d) 1 kilogram
6. **SAQ:** What is the term for 6.022x10^23 particles?
7. **MCQ:** When preparing a solution, if you use a hydrated salt, what must be included in the calculation of the molecular weight? a) The mass of the beaker b) The volume of the solvent c) **The water(s) of hydration** d) The temperature of the solution
8. **SAQ:** What is the common symbol for molarity?
9. **MCQ:** What process is defined as adding more solvent (water) to a solution? a) Crystallization b) Precipitation c) **Dilution** d) Filtration
10. **SAQ:** What happens to the number of moles of solute during a dilution?
11. **MCQ:** A saturated solution is one where, at a particular temperature, no more solute can be dissolved and the excess settles at the bottom. The solubility of most solids typically changes how with increasing temperature? a) Decreases b) **Increases** c) Stays the same d) Becomes unpredictable
12. **SAQ:** What is the main characteristic of a saturated solution regarding undissolved solute at a specific temperature?
13. **MCQ:** Which formula is specifically used to calculate the mass (m) of solute needed for preparing a molar solution when given concentration (c), volume (V), and molecular weight (MW)? a) m = c / (V x MW) b) m = V / (c x MW) c) **m = c x V x MW** d) m = (c x V) / MW
14. **SAQ:** What type of glassware is typically used to measure the final volume precisely when preparing a solution?

15. **MCQ:** What does %w/v (percentage weight per volume) represent in solution concentration? a) Grams of solute per 100 grams of solution b) Milliliters of solute per 100 milliliters of solution c) **Grams of solute dissolved in 100 mL of solution** d) Grams of solute per liter of solution
16. **SAQ:** What term describes a concentrated solution that is diluted to a lower concentration for use?
17. **MCQ:** Which of the following is a common strength of hydrogen peroxide solution used for science investigations in schools? a) 100 volume (30%) b) 120 volume (35%) c) **20 volume (6%)** d) 5 volume (1.5%)
18. **SAQ:** What does the term 'anhydrous' mean regarding a salt?
19. **MCQ:** What is an advantage of expressing concentration as weight percent (%w/w)? a) It is always a whole number. b) **The solution can be prepared independently of temperature considerations.** c) It only applies to liquid solutes. d) It is simpler to calculate than molarity.
20. **MCQ:** To ensure accurate measurements, volumetric glassware is calibrated at what temperature? a) Boiling point b) Freezing point c) **Room temperature** d) 0 degrees Celsius

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Answers

1. **SAQ 1 Answer:** Solute
2. **SAQ 2 Answer:** mol
3. **SAQ 3 Answer:** Avogadro's number
4. **SAQ 4 Answer:** M
5. **SAQ 5 Answer:** Remains same
6. **SAQ 6 Answer:** Excess settles
7. **SAQ 7 Answer:** Volumetric flask
8. **SAQ 8 Answer:** Stock solution
9. **SAQ 18 Answer:** No water