Revision Questions

Chemistry component of end of semester Test

1. **A liquid substance capable of dissolving other substances is called a**

|  |  |
| --- | --- |
| **a.** | **solution** |
| **b.** | **solute** |
| **c.** | **dissolver** |
| **d.** | **solvent** |

1. **What is the molarity of a solution containing 17.0 grams of NH3 in 1.20 liters of solution?**

|  |  |
| --- | --- |
| **a.** | **0.0832 M** |
| **b.** | **0.832 M** |
| **c.** | **1.42 M** |
| **d.** | **14.2 M** |

1. **I have two solutions. In the first solution, 1.0 moles of sodium chloride is dissolved to make 1.0 litre of solution. In the second one, 1.0 moles of sodium chloride is added to 1.0 litre of water. Is the molarity of each solution the same? Explain your answer.**
2. **Determine what mass of hydrogen gas (H2) is produced when 12.00g of aluminium (Al) reacts with excess sulfuric acid (H2SO4) to form aluminium sulphate (Al2SO4) and hydrogen gas.**

1. **Calculate the volume of 0.100M HCl would be required to react completely with 5.00 grams of Ca(OH)2 in the reaction shown below?**

**Ca(OH)2 + HCl 🡪 CaCl2 + H2O**

1. **The number 0.00540360 has how many significant figures?**

 **(a) 7 (b) 6 (c) 4 (d) 5**

1. **Balance the following equation with the smallest whole number coefficients. Choose the answer that is the sum of the coefficients in the balanced equation. Do not forget coefficients of "one."**

 **PtCl4 + XeF2  PtF6 + ClF + Xe**

1. **16**
2. **22**
3. **24**
4. **26**
5. **32**
6. **Balance the following equation with the smallest whole number coefficients. Choose the answer that is the sum of the coefficients in the balanced equation. Do not forget coefficients of "one."**

 **Cr2(SO4)3 + RbOH  Cr(OH)3 + Rb2SO4**

1. **10**
2. **12**
3. **13**
4. **14**
5. **15**
6. **When you balance the following equation using minimum integral coefficients, the stoichiometric coefficient for oxygen gas O2 is:**

 **NH3 + O2**  **NO2 + H2O**

1. **1**
2. **4**
3. **3**
4. **7**
5. **5**
6. **Which of the following statements is FALSE for the chemical equation given below in which nitrogen gas reacts with hydrogen gas to form ammonia gas assuming the reaction goes to completion?**

 **N2 + 3H2  2NH3**

1. **The reaction of one mole of H2 will produce 2/3 moles of NH3.**
2. **five moles of N2 will produce ten moles of NH3.**
3. **One molecule of nitrogen requires three molecules of hydrogen for complete reaction.**
4. **The reaction of 14 g of nitrogen produces 17 g of ammonia.**
5. **The reaction of three moles of hydrogen gas will produce 17 g of ammonia.**
6. **When 12 g of methanol (CH3OH) was treated with excess oxidizing agent (MnO4-), what mass of formic acid would be obtained.**

**3CH3OH + 4MnO4-  3HCOOH + 4MnO2**

1. **A commercially valuable paint and adhesive stripper, dimethyl sulphoxide (DMSO), (CH3)2SO, can be prepared by the reaction of oxygen, O2 with dimethyl sulphide, (CH3)2S, using a ratio of one mole oxygen to two moles of the sulphide:**

**O2 + 2(CH3)2S  2(CH3)2SO**

**How many grams of DMSO could be produced from 75 g of dimethyl sulphide and 50g O2?**

1. **The formation of ethyl alcohol (C2H5OH) by the fermentation of glucose (C6H12O6) may be represented by:**

**C6H12O6  2C2H5OH + 2CO2**

**If a particular glucose fermentation process yielded 51.0 g of ethyl alcohol (C2H5OH, what mass of glucose was involved in the reaction?**

1. **The limiting reagent in a chemical reaction is one that:**
2. **has the largest molar mass (formula weight).**
3. **has the smallest molar mass (formula weight).**
4. **has the smallest coefficient.**
5. **is consumed completely.**