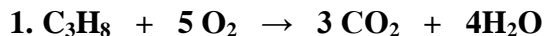




INTRODUCTION TO CHEMISTRY (CHEM 101)

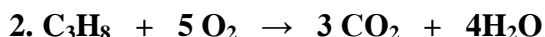
Assessment on Chapter 04 - Topic 13



The molar masses: $C_3H_8 = 44.0$, $O_2 = 32.0$, $CO_2 = 44.0$, $H_2O = 18.0$.

10 mol of O_2 with an excess of C_3H_8 should produce mol of CO_2 .

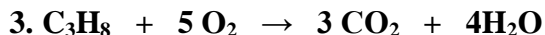
- a. 3 b. 4 c. 5 d. 6



The molar masses: $C_3H_8 = 44.0$, $O_2 = 32.0$, $CO_2 = 44.0$, $H_2O = 18.0$.

44.0 g of C_3H_8 with an excess of O_2 yields g of CO_2 .

- a. 44.0 b. 88.0 c. 132 d. 176



The molar masses: $C_3H_8 = 44.0$, $O_2 = 32.0$, $CO_2 = 44.0$, $H_2O = 18.0$.

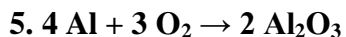
A yield of 66 g of CO_2 should also yield g of H_2O .

- a. 18 b. 36 c. 54 d. 72



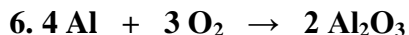
108 g of Al needs g of O_2 without either one being a limiting reactant.

- a. 96.0 b. 102.0 c. 108.0 d. 114.0



54.0 g of Al with an excess of O_2 yields g of Al_2O_3 .

- a. 102.0 b. 204.0 c. 76.5 d. 51.0

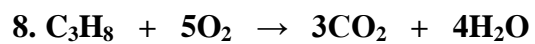


To make 51.0 g of Al_2O_3 , we need g of Al.

- a. 108.0 b. 51.0 c. 27.0 d. 20.0

7. Stoichiometry is a comparison of quantities in reactions.

- a. True b. False



If we started with 2 mol of C_3H_8 and 8 mol of O_2 , C_3H_8 is the limiting reactant.

a. True

b. False

9. Percent yield = $\frac{\textit{Theoretical yield}}{\textit{Actual yield}} \times 100$

a. True

b. False

10. The mass of a reactant cannot be compared to the mass of a product without changing the masses to moles.

a. True

b. False



INTRODUCTION TO CHEMISTRY (CHEM 101)

Assessment on Chapter 04 - Topic 14

1. What is the unit for “molarity”?

- a. g/L b. mol/L c. g/mol d. L/mol

2. The molarity of a solution is defined as the number of

- a. moles of solute per liter of solution. b. moles of solute per kg of solution.
 c. grams of solute per liter of solution. d. moles of solute per kg of solvent.

3. What is the molarity of a KNO_3 solution containing 2.45 mol KNO_3 in 500 mL of solution?

- a. 0.049 M b. 204 M c. 2.45 M d. 0.500 M e. 4.90 M

4. What is the molarity of 2.0 moles of glucose in 4.0 L of glucose solution?

- a. 0.25 M b. 0.50 M c. 0.75 M d. 1.00 M

5. In aqueous solutions, water is the solute.

- a. True b. False

6. If 29.25 g NaCl are dissolved in 1 L of solution, then the solution has a molarity of 0.5 M.

- a. True b. False

7. 1 L of a 12 M solution is diluted to 2 L. So, its molarity becomes 6 M.

- a. True b. False

8. Which of the following aqueous solutions will be a strong electrolyte?

- a. strong base (KOH) in water b. ammonia (NH_3) in water
 c. ethanol ($\text{C}_2\text{H}_5\text{OH}$) in water d. sugar ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) in water

9. Which of the following aqueous solutions will be a strong electrolyte?

- a. strong base (KOH) in water b. ammonia (NH₃) in water
 c. ethanol (C₂H₅OH) in water d. sugar (C₁₂H₂₂O₁₁) in water

10. Which of the following solutions can be classified as non-electrolyte?

- a. table salt (NaCl) in water b. ammonia (NH₃) in water
 c. acetic acid (CH₃COOH) in water d. sugar (C₁₂H₂₂O₁₁) in water

11. Which of the following aqueous solutions would conduct electricity?

- a. AgNO₃ b. C₁₂H₂₂O₁₁ (sucrose) c. CH₃CH₂OH (ethanol)
 d. all of them e. none of them



INTRODUCTION TO CHEMISTRY (CHEM 101)

Assessment on Chapter 04 - Topic 15

1. Neutralization reactions always produce

- a. Acids b. Water c. Bases d. Salt e. Both water and salt

2. The oxidation number of an element in the free or uncombined state is always

- a. 0 b. +1 c. -1 d. the same as its ionic charge

3. A substance is reduced if it

- a. lose electrons. b. gains hydrogen atoms.
 c. gains electrons. d. None of these

4. All of the following can have an oxidation number of +4 except

- a. carbon b. calcium
 c. silicon d. Lead

5. Oxidation is shown by which of these changes in oxidation states?

- a. 0 to 2+ b. 5+ to 3+ c. 3+ to 0 d. 0 to 2-

6. Which of the following shows an oxidation?

- a. O_2 to O^{2-} b. Cl_2 to Cl^{1-} c. N^{3+} to N_2 d. H_2 to H^{1+}

7. If one element is oxidized, another one is reduced.

- a. True b. False

8. In the reaction $N_2 + O_2 \rightarrow N_2O_4$, nitrogen is reduced.

- a. True b. False