

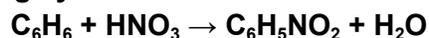
DVHS Honors Chemistry  
Practice Quiz-2: Stoichiometry

1. Which of the following statements is true?

- I. The molar mass of  $\text{CaCO}_3$  is 100.1 g/mol
- II. 50 g of  $\text{CaCO}_3$  contains  $9 \times 10^{23}$  oxygen atoms.
- III. A 200 g sample of  $\text{CaCO}_3$  contains 2 moles of  $\text{CaCO}_3$

- a. I only    b. II only    c. III only    d. I and III only    e. I, II, and III

2. The reaction of 7.8 g benzene ( $\text{C}_6\text{H}_6$ ), with excess  $\text{HNO}_3$  resulted in 0.90 g of  $\text{H}_2\text{O}$ . What is the percentage yield?



- a. 100%    b. 90%    c. 50%    d. 12%    e. 2%

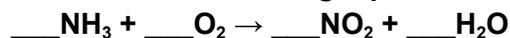
3. What is the total mass of products formed when 16 grams of  $\text{CH}_4$  is burned with excess oxygen?

- a. 32 g    b. 36 g    c. 44 g    d. 62 g    e. 80 g

4. Write a balanced equation for the combustion of propane [ $\text{C}_3\text{H}_8$ ]. When balanced, the equation indicates that \_\_\_ moles of  $\text{O}_2$  are required for each mole of  $\text{C}_3\text{H}_8$ .

- a. 1.5    b. 3    c. 3.5    d. 5    e. 8

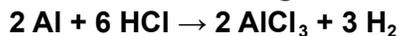
5. Balance the following equation:



The balanced equation shows that 1.00 mole of  $\text{NH}_3$  requires \_\_\_ mole(s) of  $\text{O}_2$

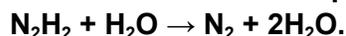
- a. 0.57    b. 1.25    c. 1.33    d. 1.75    e. 3.5

6. Calculate the mass of hydrogen formed when 27 g of aluminum reacts with excess hydrochloric acid according to the balanced equation below.



- a. 1.5 g    b. 2.0 g    c. 3.0 g    d. 6.0 g    e. 12 g

7. The balanced chemical equation for the reaction that is used to fuel rockets is



How many grams of  $\text{N}_2\text{H}_2$  are needed to produce 10.0 mol nitrogen gas?

- a. 600. g    b. 300 g    c.  $3.0 \times 10^2$  g    d. 300. g    e. 600 g

8. Determine the mole ratio necessary to convert mole of aluminum to moles of aluminum chloride. The unbalanced equation is  $\_\_ \text{Al} + \_\_ \text{Cl}_2 \rightarrow \_\_ \text{AlCl}_3$

- a. 2:3      b. 2:2      c. 3:2      d. 1:3      e. 3:1

9. What is the molar mass of  $\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2$  ?

- a. 392.8g/mol      b. 142.9g/mol      c. 361g/mol      d. 183.5 g/mol

10.  $\_\_ \text{B}_2\text{H}_6 + \_\_ \text{O}_2 \rightarrow \_\_ \text{HBO}_2 + \_\_ \text{H}_2\text{O}$

What mass of  $\text{O}_2$  will be needed to burn 36.1 g of  $\text{B}_2\text{H}_6$ ?

- a. 13.8 g  $\text{O}_2$       b. 3.86 mol of  $\text{O}_2$       c. 124 g  $\text{O}_2$       d. 124.0 g  $\text{O}_2$

## Practice Quiz-2: Key

1. E

2. C

3. E

4. D      Balanced equation:  $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$

5. D      Balanced equation:  $4\text{NH}_3 + 7\text{O}_2 \rightarrow 4\text{NO}_2 + 6\text{H}_2\text{O}$

6. C

7. D

8. B

9. D

10. C