1. In this unbalanced chemical reaction below, which components are the reactants?

 $C_7H_{16} + O_2 \rightarrow CO_2 + H_2O$

2. What type of chemical reaction is listed below?

 $CaCO_3 \longrightarrow CaO + CO_2$

(A) Single-replacement reaction(B) Double-replacement reaction(C) Synthesis reaction(D) Decomposition reaction

- 3. In the complete **combustion** reaction of propane (C₃H₈) with oxygen gas, what are the **products**?
 - $\begin{array}{rrrr} (A) C_3 H_8 & and & O_2 \\ (B) C_3 H_8 & and & CO_2 \\ (C) H_2 O & and & CO_2 \\ (D) O_2 & and & H_2 O \end{array}$
- 4. Use the following balanced equation. Which one of the following statements is *false*?

 $2H_2 + O_2 - 2H_2O$

- (A) Two molecules of H₂ will produce one molecule of H₂O.
- (B) Two molecules of H_2 will produce two molecules of H_2O .
- (C) One molecule of O_2 will react with 2 molecules of H_2
- (D) One molecule of O2 will produce 2 molecules of H2O.
- 5. Which of the following is true in a balanced chemical reaction?
 - (A) Atoms are conserved.
 - (B) Mass is conserved.
 - (C) A and B are both correct.
 - (D) Nothing is conserved.
- 6. What are the coefficients of the following reaction when correctly balanced? $N_2 + H_2 \rightarrow NH_3$
 - (A) 1, 3, 2 (B) 1, 2, 3 (C) 1, 1, 1 (D) 2, 1, 3

7. First balance the equation below. Then, determine what is the <u>coefficient</u> for hydrogen fluoride?

 $\underline{SiO}_2 + \underline{HF} \rightarrow \underline{SiF}_4 + \underline{H}_2O$

8. What are the coefficients of the following reaction when correctly balanced?

 $_$ CaCl₂ + $_$ Na₃PO₄ \rightarrow $_$ Ca₃(PO₄)₂ + $_$ NaCl

(A) 1, 1, 1, 1 (B) 3, 2, 1, 6 (C) 1, 2, 3, 4 (D) 2, 3, 1, 6

(A) 1 (B) 2 (C) 3 (D) 4

- 9. What are the coefficients of the following reaction when correctly balanced? $\underline{H_2CO_3} \rightarrow \underline{H_2O} + \underline{CO_2}$

 - (B) 1, 2, 3 (C) 1, 2, 2

(A) 1, 1, 1

- (D) 2, 2, 1
- 10. What are the coefficients of the following reaction when correctly balanced? $\underline{Pb(NO_3)_2 + \underline{KI} \rightarrow \underline{PbI_2 + \underline{KNO_3}}$
 - (A) 2, 1, 2, 1 (B) 1, 1, 1, 1 (C) 1, 2, 2, 1 (D) 1, 2, 1, 2