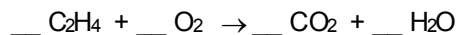


# Reaction Types & Balancing Review

## Chemistry

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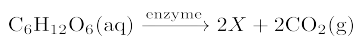
1. When the equation



is balanced using smallest whole numbers, what is the coefficient of the  $\text{O}_2$ ?

- A) 1      B) 2      C) 3      D) 4

2. Given the balanced equation with an unknown compound represented by X:



Which compound is represented by X?

- A)  $\text{CH}_2(\text{OH})_4(\text{aq})$       B)  $\text{CH}_3\text{OH}(\text{aq})$   
C)  $\text{CH}_2\text{OHCH}_2\text{OH}(\text{aq})$       D)  $\text{CH}_3\text{CH}_2\text{OH}(\text{aq})$

3. Given the unbalanced equation:



What is the sum of the coefficients when the equation is completely balanced using the smallest whole number coefficients?

- A) 7                      B) 5                      C) 9                      D) 11
- 

4.  $\text{N}_2(\text{g}) + 3 \text{H}_2(\text{g}) \leftrightarrow 2 \text{NH}_3(\text{g})$

What type of reaction is shown above?

- A) single replacement      B) double replacement  
C) decomposition      D) synthesis

5. Based on Table F, which compound is *least* soluble in water?

- A)  $\text{AgC}_2\text{H}_3\text{O}_2$               B)  $\text{Li}_2\text{SO}_4$   
C)  $\text{AlPO}_4$                       D)  $\text{Ca}(\text{OH})_2$

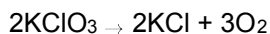
6. Which change results in the formation of different substances?

- A) deposition of  $\text{CO}_2(\text{g})$       B) burning of propane  
C) melting of  $\text{NaCl}(\text{s})$       D) solidification of water

7. Which list includes three types of chemical reactions?

- A) solidification, double replacement, and decomposition  
B) decomposition, single replacement, and solidification  
C) decomposition, single replacement, and double replacement  
D) solidification, double replacement, and single replacement

8. Given the balanced equation:



Which type of reaction is represented by this equation?

- A) double replacement      B) synthesis  
C) decomposition              D) single replacement

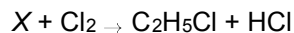
9. Given the word equation:

sodium chlorate  $\rightarrow$  sodium chloride + oxygen

Which type of chemical reaction is represented by this equation?

- A) double replacement      B) synthesis  
C) single replacement      D) decomposition

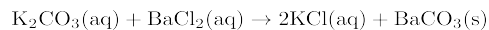
10. Given the balanced equation:



Which molecule is represented by X?

- A)  $\text{C}_3\text{H}_8$       B)  $\text{C}_3\text{H}_6$       C)  $\text{C}_2\text{H}_4$       D)  $\text{C}_2\text{H}_6$
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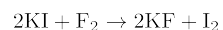
11. Given the balanced equation representing a reaction:



Which type of reaction is represented by this equation?

- A) synthesis  
B) single replacement  
C) double replacement  
D) decomposition

12. Given the balanced equation:



Which type of chemical reaction does this equation represent?

- A) decomposition  
B) double replacement  
C) single replacement  
D) synthesis

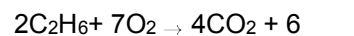
13. Given the unbalanced equation:



What is the coefficient of  $\text{O}_2$  when the equation is balanced correctly using the *smallest* whole number coefficients?

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

14. Given the incomplete equation for the combustion of ethane:



What is the formula of the missing product?

- A)  $\text{HCOOH}$   
B)  $\text{H}_2\text{O}$   
C)  $\text{H}_2\text{O}_2$   
D)  $\text{CH}_3\text{OH}$

15. Which two solutions, when mixed together, will undergo a double replacement reaction and form a white, solid substance?

- A)  $\text{NaCl}(\text{aq})$  and  $\text{LiNO}_3(\text{aq})$   
B)  $\text{NaNO}_3(\text{aq})$  and  $\text{AgNO}_3(\text{aq})$   
C)  $\text{KCl}(\text{aq})$  and  $\text{AgNO}_3(\text{aq})$   
D)  $\text{KCl}(\text{aq})$  and  $\text{LiCl}(\text{aq})$

16. Which balanced equation represents a single-replacement reaction?

- A)  $\text{MgCO}_3 \rightarrow \text{MgO} + \text{CO}_2$   
B)  $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$   
C)  $\text{Mg} + 2\text{AgNO}_3 \rightarrow \text{Mg}(\text{NO}_3)_2 + 2\text{Ag}$   
D)  $\text{MgCl}_2 + 2\text{AgNO}_3 \rightarrow 2\text{AgCl} + \text{Mg}(\text{NO}_3)_2$

17. According to Table F which compound is soluble in water?

- A) silver iodide  
B) sodium perchlorate  
C) calcium sulfate  
D) barium phosphate

18. Given the balanced equation representing a reaction:



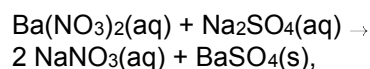
What is the *minimum* number of moles of  $\text{O}_2$  that are needed to completely react with 16 moles of  $\text{NH}_3$ ?

- A) 80. mol  
B) 64 mol  
C) 20. mol  
D) 16 mol

19. When  $\text{PbI}_2(\text{s})$  is added to  $\text{Na}_2\text{CO}_3(\text{aq})$ , a white precipitate is formed. According to Reference Table F, the white precipitate most likely is

- A)  $\text{KNO}_3$   
B)  $\text{Na}_2\text{CO}_3$   
C)  $\text{PbCO}_3$   
D)  $\text{NaI}$

20. The reaction,



forms a precipitate whose name is

- A) barium sulfate  
B) barium nitrate  
C) nitrogen  
D) soluble salt