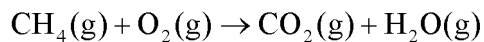
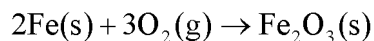




7. Calculate the mass of water produced when 8.57 g of methane, CH<sub>4</sub>, reacts with an excess of oxygen in the following **unbalanced** reaction.

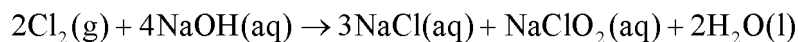


- A) 9.62 g H<sub>2</sub>O  
B) 3.09 × 10<sup>2</sup> g H<sub>2</sub>O  
C) 19.2 g H<sub>2</sub>O  
D) 0.476 g H<sub>2</sub>O  
E) 1.07 g H<sub>2</sub>O
8. Consider the reaction



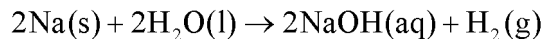
If 12.7 g of iron(III) oxide (rust) is produced from a certain amount of iron, how many grams of oxygen are needed for this reaction?

- A) 3.82 g  
B) 7.63 g  
C) 1.70 g  
D) 2.54 g  
E) none of these
9. For the reaction



how many grams of NaCl can be produced from 22.5 g of Cl<sub>2</sub> and excess NaOH?

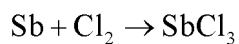
- A) 27.8 g NaCl  
B) 12.4 g NaCl  
C) 18.5 g NaCl  
D) 9.27 g NaCl  
E) none of these
10. Sodium and water react according to the equation



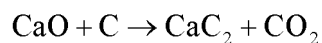
What number of moles of H<sub>2</sub> will be produced when 4.0 mol Na is added to 2.8 mol H<sub>2</sub>O?

- A) 1.4 mol      B) 5.6 mol      C) 2.0 mol      D) 2.8 mol      E) 8.0 mol

11. How many moles of  $\text{SbCl}_3$  is formed when 4.00 mol Sb are reacted with 4.70 mol  $\text{Cl}_2$  according to the unbalanced equation



- A) 7.05 mol  $\text{SbCl}_3$   
B) 4.70 mol  $\text{SbCl}_3$   
C) 3.13 mol  $\text{SbCl}_3$   
D) 4.00 mol  $\text{SbCl}_3$   
E) Cannot be determined based on the information given.
12. Determine the mass of  $\text{CO}_2$  produced when 66.9 g of CaO is reacted with 50.0 g of C according to the unbalanced equation



- A) 26.3 g  $\text{CO}_2$   
B) 105 g  $\text{CO}_2$   
C) 52.5 g  $\text{CO}_2$   
D) 36.6 g  $\text{CO}_2$   
E) none of these
13. In the reaction between CO and  $\text{Fe}_3\text{O}_4$ , the theoretical yield in an experiment is calculated to be 47.2 g Fe. When a careless chemistry student carries out the experiment, the actual yield is 34.4 g Fe. Calculate the percentage yield.
- A) 72.9%  
B) 27.1%  
C) 48.6%  
D) 36.4%  
E) none of these
14. When  $\text{NH}_3$  is prepared from 28 g  $\text{N}_2$  and excess  $\text{H}_2$ , the theoretical yield of  $\text{NH}_3$  is 34 g. When this reaction is carried out in a given experiment, only 23 g is produced. What is the percentage yield? (Ignore significant figures for this problem.)
- A) 32%      B) 45%      C) 23%      D) 34%      E) 68%

## Answer Key - Test 5 practice

1. True
2. False
3. B
4. C
5. True
6. C
7. C
8. B
9. A
10. A
11. C
12. A
13. A
14. E