

# HW01 - Chemistry Fundamentals

 This is a preview of the published version of the quiz

Started: Sep 14 at 12:55pm

## Quiz Instructions

### Homework 01 - Chemistry Fundamentals

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#### Question 1

2 pts

The measurement  $4.7 \times 10^{-3}$  m could also be written as...

- 4.7 nm
- 4.7 km
- 4.7 mm
- 4.7 Mm

#### Question 2

2 pts

The mole concept is important in chemistry because...

- it allows us to distinguish between elements and compounds.
- it allows us to count atoms and molecules by weighing macroscopic amounts of material.
- it provides a universally accepted standard for mass.
- it establishes a standard for reaction stoichiometry.

#### Question 3

2 pts

How many atoms of hydrogen are contained in 2 moles of methane (CH<sub>4</sub>)?

- 4.82 x 10<sup>24</sup> atoms
- 2.41 x 10<sup>24</sup> atoms
- 1.20 x 10<sup>24</sup> atoms
- 4 atoms

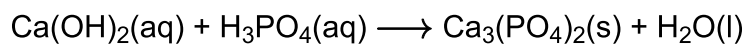
**Question 4****2 pts**

Which has the greatest number of hydrogen atoms?

- 20g of hydrogen gas
- 100g of water
- 10<sup>20</sup> hydrogen atoms
- 100g of a substance that is 2% H by mass

**Question 5****2 pts**

Consider the following UNBALANCED chemical equation:

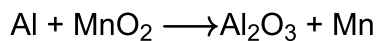


What is the coefficient for H<sub>2</sub>O when the reaction is balanced using the smallest possible integers?

- 3
- 6
- 4

2 1**Question 6****2 pts**

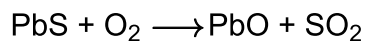
When aluminum metal is heated with manganese oxide, the following reaction occurs:



Balance this equation. What is the sum of the coefficients of ALL species in the balanced chemical equation?

 15 7 10 12**Question 7****2 pts**

When the equation

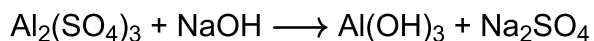


is balanced, the coefficients are \_\_\_\_\_, respectively.

 2, 3, 2, 2 2, 2, 1, 2 1, 2, 1, 1 1, 2, 3, 3

**Question 8****2 pts**

Consider the UNBALANCED reaction below.



Balance this equation using the smallest possible integers. What is the sum of the coefficients in the balanced equation?

 8 6 14 12 10**Question 9****2 pts**

Which of the following has the greatest number of ATOMS?

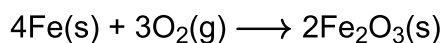
 These all have the same number of atoms. 3.05 moles of argon 3.05 moles of  $\text{CH}_4$  3.05 moles of water**Question 10****2 pts**

If 100.0 grams of copper (Cu) completely reacts with 25.0 grams of oxygen, how much copper (II) oxide (CuO) will form from 140.0 grams of copper and excess oxygen? (Note: CuO is the only product of this reaction.)

- 175.0 g
- 160.0 g
- 210.0 g
- 35.00 g

**Question 11****2 pts**

Consider the following reaction:

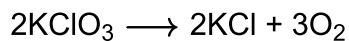


If 12.50 g of iron (III) oxide (rust) are produced from 8.74 g of iron, how much oxygen gas is needed for this reaction?

- 8.74 g
- 7.55 g
- 3.76 g
- 21.24 g

**Question 12****2 pts**

Upon heating, potassium chlorate produces potassium chloride and oxygen.

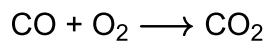


What mass of oxygen would be produced upon thermal decomposition of 25 g of potassium chlorate ( $\text{KClO}_3$ )? The molecular weight (MW) of potassium chlorate is 122.5 g/mol.

- 3.3 g
- 9.8 g

6.5 g 4.9 g**Question 13****2 pts**

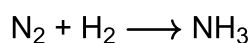
Consider the following reaction:



How much oxygen is required to convert 35 g of CO into CO<sub>2</sub>?

 20 g 35 g 40 g 10 g**Question 14****2 pts**

Consider the following reaction:

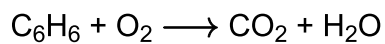


How many MOLECULES of NH<sub>3</sub> can be produced from the reaction of 74.2 g of N<sub>2</sub> and 14.0 moles of H<sub>2</sub>?

 5.62 x 10<sup>24</sup> molecules 3.19 x 10<sup>24</sup> molecules 1.26 x 10<sup>25</sup> molecules 4.45 x 10<sup>24</sup> molecules

**Question 15****2 pts**

Consider the following reaction:



39.7 grams of  $\text{C}_6\text{H}_6$  are allowed to react with 105.7 g of  $\text{O}_2$ . How much  $\text{CO}_2$  will be produced by this reaction?

- 22.4 g
- 116.3 g
- 145.3 g
- 134.4 g

Quiz saved at 1:00pm

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