

HW01 - Chemistry Fundamentals

 This is a preview of the draft version of the quiz

Started: Aug 8 at 4:45pm

Quiz Instructions

Homework 01 - Chemistry Fundamentals

Question 1

1 pts

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

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

Question 2

1 pts

The mole concept is important in chemistry because...

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

Question 3

1 pts

How many atoms of hydrogen are contained in 2 moles of methane (CH₄)?

- 4 atoms
- 4.82×10^{24} atoms
- 1.20×10^{24} atoms
- 2.41×10^{24} atoms

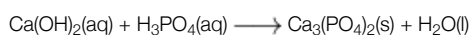
Question 4**1 pts**

Which has the greatest number of hydrogen atoms?

- 100g of water
- 100g of a substance that is 2% H by mass
- 10^{20} hydrogen atoms
- 20g of hydrogen gas

Question 5**1 pts**

Consider the following UNBALANCED chemical equation:



What is the coefficient for H₂O when the reaction is balanced using the smallest possible integers?

- 6
- 3
- 2
- 4
- 1

Question 6**1 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?

 10 7 15 12**Question 7****1 pts**

When the equation



is balanced, the coefficients are _____, respectively.

 1, 2, 1, 1 2, 2, 1, 2 1, 2, 3, 3 2, 3, 2, 2**Question 8****1 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?

10 12 14 8 6**Question 9****1 pts**

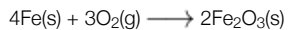
Which of the following has the greatest number of ATOMS?

 These all have the same number of atoms. 3.05 moles of CH_4 3.05 moles of water 3.05 moles of argon**Question 10****1 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 210.0 g 35.00 g 160.0 g**Question 11****1 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?

3.76 g

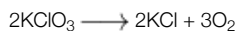
21.24 g

7.55 g

8.74 g

Question 12**1 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 (KClO_3)? The molecular weight (MW) of potassium chlorate is 122.5 g/mol.

9.8 g

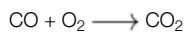
3.3 g

4.9 g

6.5 g

Question 13**1 pts**

Consider the following reaction:



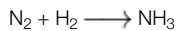
How much oxygen is required to convert 35 g of CO into CO_2 ?

10 g

20 g

35 g 40 g**Question 14****1 pts**

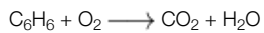
Consider the following reaction:



How many MOLECULES of NH_3 can be produced from the reaction of 74.2 g of N_2 and 14.0 moles of H_2 ?

 4.45×10^{24} molecules 1.26×10^{25} molecules 5.62×10^{24} molecules 3.19×10^{24} molecules**Question 15****1 pts**

Consider the following reaction:



39.7 grams of C_6H_6 are allowed to react with 105.7 g of O_2 . How much CO_2 will be produced by this reaction?

 134.4 g 145.3 g 22.4 g 116.3 g

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