

HW01 - Chemistry Fundamentals

 This is a preview of the published version of the quiz

Started: Jul 7 at 9:42am

Quiz Instructions

Homework 01 - Chemistry Fundamentals

(only 2 attempts)

Question 1

1 pts

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

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

Question 2

1 pts

The mole concept is important in chemistry because...

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

Question 3

1 pts

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

- ☐ 4.82 x 10²⁴ atoms
- ☐ 1.20 x 10²⁴ atoms
- ☐ 2.41 x 10²⁴ atoms
- ☐ 4 atoms

Question 4

1 pts

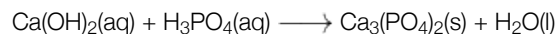
Which has the greatest number of hydrogen atoms?

- ☐ 10²⁰ hydrogen atoms
- ☐ 100g of a substance that is 2% H by mass
- ☐ 20g of hydrogen gas
- ☐ 100g of water

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?

- ☐ 1
- ☐ 3
- ☐ 6
- ☐ 4
- ☐ 2

Question 6**1 pts**

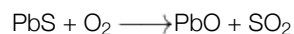
When aluminum metal is heated with manganese oxide, the following reaction occurs:



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

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

When the equation



is balanced, the coefficients are _____, respectively.

☐ 1, 2, 3, 3☐ 1, 2, 1, 1☐ 2, 3, 2, 2☐ 2, 2, 1, 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?

☐ 6☐

8

☐ 14

☐ 12

☐ 10

Question 9

1 pts

Which of the following has the greatest number of ATOMS?

☐ 3.05 moles of CH₄

☐ 3.05 moles of argon

☐ 3.05 moles of water

☐ These all have the same number of atoms.

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.)

☐ 35.00 g

☐ 210.0 g

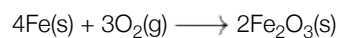
☐ 175.0 g

☐ 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?

☐ 21.24 g

☐ 7.55 g

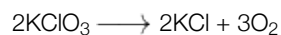
☐ 3.76 g

☐ 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.

☐ 4.9 g

☐ 6.5 g

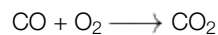
☐ 3.3 g

☐ 9.8 g

Question 13

1 pts

Consider the following reaction:



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

☐ 35 g

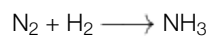
☐ 40 g

☐ 20 g

☐ 10 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 ?

☐ 1.26 x 10^{25} molecules

☐ 4.45 x 10^{24} molecules

☐ 5.62 x 10^{24} molecules

☐ 3.19 x 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?

☐ 116.3 g

☐ 145.3 g

☐ 134.4 g

☐ 22.4 g

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