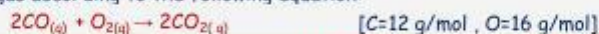


Home performance (week 2)

Q1: Choose the correct answer:

1- At STP, calculate the volume of CO_2 gas produced by mixing 20 g of CO gas with an excess amount of oxygen gas according to the following equation:



- a) 45 L b) 8 L c) 23 L d) 16 L

2- At 25°C and 1 atm, a gas occupies a volume of 4L, How many moles are there?

- a) 0.18 moles of gas molecules b) 0.93 moles of gas molecules
c) 0.17 moles of gas molecules d) 8.96 moles of gas molecules

3- How many grams of oxygen gas are necessary to react completely with 2.93×10^{21} atoms of magnesium to yield magnesium oxide? [O=16g/mol, Mg=24g/mol]

- a) 2.68×10^{-2} g b) 6.18×10^{-4} g c) 1.56×10^{-1} g d) 7.78×10^{-2} g

4- Propane (C_3H_8) burns completely in excess amount of oxygen (O_2) according to the following equation:



-If 11.0 grams of C_3H_8 is completely combusted at room temperature, then the volume of CO_2 gas produced is ----- (C=12 g/mol, H=1 g/mol)

- a) 30 cm^3 b) 30 L c) 18 L d) 55 L

5- Phosphate radical is detected in its sodium salt by silver nitrate solution According to the following equation:



-If you start with a pure sample of the sodium Phosphate salt weighs 5 grams, calculate the mass of formed precipitate?

[Na_3PO_4 =164 g/mol, AgNO_3 =170g/mol, NaNO_3 =85g/mol, Ag_3PO_4 =419g/mol]

- a) 12.77 g b) 12.32 g c) 1.95g d) 5.00 g

6- Methane gas reacts with oxygen according to the following equation:



- If 60 g of oxygen gas is added to 20 gm of methane gas in a closed container, Calculate the total mass of gases and vapors at the end of reaction?

(C=12 g/mol, H=1 g/mol, O =16 g/mol)

- a) 100 g b) 46.25 g c) 5 g d) 80 g

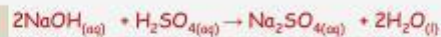
7- Balance the chemical equation for reduction of iron III oxide by carbon monoxide

, then calculate the volume of carbon dioxide gas evolved at 273°K and 1 atm from the reaction of 1.6 gm of iron III oxide with 1.68 g of carbon monoxide.



- a) 0.672 b) 1.344 c) 0.224 d) 67.2

8- In the neutralization reaction between sodium hydroxide and sulphuric acid According to the equation: -



-If 80 gm of sodium hydroxide is added to 49 gm of sulfuric acid, then which of The following exists in water at the end of reaction?

- a) Sodium hydroxide and sodium sulphate
- b) Sulphuric acid and sodium sulphate
- c) Sodium hydroxide and sulphuric acid
- d) Sodium hydroxide , sodium sulphate and sulphuric acid

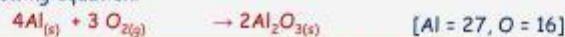
9- Ammonia gas (NH_3) is produced by the reaction of nitrogen (N_2) and Hydrogen (H_2)

-How many grams of nitrogen gas are required to prepare 72 liters of ammonia at STP?

(N=14 g/mol, H=1 g/mol)

- a) 35.99 g
- b) 33.60 g
- c) 42.00g
- d) 44.99 g

10- How many grams of Aluminum metal will be completely oxidized by 44.8L of oxygen at STP according to the following equation?



- a) 54 gm
- b) 108 gm
- c) 27 gm
- d) 72 gm