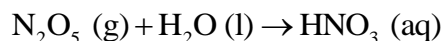


Quiz 1 for stoichiometry (Chapter 1 and 2)

Answer the following questions

1) When the following equation is balanced, the coefficient of nitric acid is _____.



- A) 5
- B) 2
- C) 3
- D) 4
- E) 1

2) There are _____ mol of carbon atoms in 4 mol of dimethylsulfoxide ($\text{C}_2\text{H}_6\text{SO}$).

- A) 2
- B) 6
- C) 8
- D) 4
- E) 3

3) There are _____ sulfur atoms in 25 molecules of $\text{C}_4\text{H}_4\text{S}_2$.

- A) 1.5×10^{25}
- B) 4.8×10^{25}
- C) 3.0×10^{25}
- D) 50
- E) 6.02×10^{23}

4) How many moles of carbon dioxide are there in 52.06 g of carbon dioxide?

- A) 0.8452
- B) 1.183
- C) 6.022×10^{23}
- D) 8.648×10^{23}
- E) 3.134×10^{25}

5) A 2.25-g sample of magnesium nitrate, $\text{Mg}(\text{NO}_3)_2$, contains _____ mol of this compound.

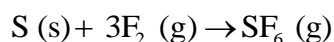
- A) 38.4
- B) 65.8
- C) 148.3
- D) 0.0261
- E) 0.0152

6) What is the maximum mass in grams of NH_3 that can be produced by the reaction of 1.0 g of N_2 with 3.0 g of H_2 via the equation below?



- A) 2.0
- B) 1.2
- C) 0.61
- D) 17
- E) 4.0

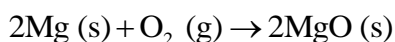
7) Sulfur and fluorine react in a combination reaction to produce sulfur hexafluoride:



In a particular experiment, the percent yield is 79.0%. This means that in this experiment, a 7.90-g sample of fluorine yields _____ g of SF_6 .

- A) 30.3
- B) 10.1
- C) 7.99
- D) 24.0
- E) 0.110

8) Magnesium burns in air with a dazzling brilliance to produce magnesium oxide:



How many moles of O_2 are consumed when 0.770 mol of magnesium burns?

- A) 0.0317
- B) 2.60
- C) 0.770
- D) 1.54
- E) 0.385

9) The total concentration of ions in a 0.250 M solution of HCl is _____.

- A) essentially zero.
- B) 0.125 M
- C) 0.250 M
- D) 0.500 M
- E) 0.750 M

10) What is the concentration (M) of KCl in a solution made by mixing 25.0 mL of 0.100 M KCl with 50.0 mL of 0.100 M KCl?

- A) 0.100
- B) 0.0500
- C) 0.0333

- D) 0.0250
- E) 125

11) How many grams of H_3PO_4 are in 175 mL of a 3.5 M solution of H_3PO_4 ?

- A) 0.61
- B) 60
- C) 20
- D) 4.9
- E) 612

12) How many grams of CH_3OH must be added to water to prepare 150 mL of a solution that is 2.0 M CH_3OH ?

- A) 9.6×10^3
- B) 4.3×10^2
- C) 2.4
- D) 9.6
- E) 4.3

13) A 0.100 M solution of _____ will contain the highest concentration of potassium ions.

- A) potassium phosphate
- B) potassium hydrogen carbonate
- C) potassium hypochlorite
- D) potassium iodide
- E) potassium oxide

14) What volume (mL) of a concentrated solution of sodium hydroxide (6.00 M) must be diluted to 200. mL to make a 1.50 M solution of sodium hydroxide?

- A) 0.0500
- B) 50.0
- C) 45.0
- D) 800.
- E) 0.800