

Stoichiometry Review

- Which is the correct formula for chromium (VI) fluoride?
 - 1) Cr_2F_6
 - 2) Cr_6F
 - 3) Cr(VI)F
 - 4) Cr(VI)F_6
 - 5) CrF_6
- What is the name of the compound whose formula is N_2O_5 ?
 - 1) nitrogen (V) oxide
 - 2) nitrogen (II) oxide
 - 3) nitrogen (III) oxide
 - 4) nitrogen (IV) oxide
 - 5) nitrogen (I) oxide
- A sample of an organic compound is found to contain 12.0 g of carbon, 5.60 g of nitrogen and 2.40 g of hydrogen, what is a possible formula for this compound?
 - 1) $\text{C}_5\text{N}_2\text{H}_{12}$
 - 2) $\text{C}_2\text{N}_2\text{H}_8$
 - 3) $\text{C}_5\text{N}_2\text{H}_{24}$
 - 4) $\text{C}_2\text{N}_5\text{H}_{12}$
 - 5) $\text{C}_8\text{N}_3\text{H}_3$
- How many moles of boron are produced when 290. grams of BCl_3 react completely with hydrogen gas? (atomic weight boron = 11.0 amu, atomic weight of chlorine = 35.0 amu)
 - 1) 1.25 moles
 - 2) 2.50 moles
 - 3) 7.50 moles
 - 4) 15.0 moles
 - 5) 5.00 moles
- What is the formula for aluminum sulfate?
 - 1) AlSO_4
 - 2) Al_2SO_4
 - 3) $\text{Al}_3(\text{SO}_4)_2$
 - 4) $\text{Al}_2(\text{SO}_4)_3$
 - 5) Al_3SO_4
- The first chemical compound of a noble gas element was prepared in 1962. Since then several such compounds have been prepared and characterized. What is the empirical formula of a compound of Xe which is 67.2% Xe and 32.8 % O by mass?
 - 1) XeO_2
 - 2) XeO_3
 - 3) XeO_4
 - 4) XeO_5
 - 5) Xe_2O_5
- In the thermite reaction, aluminum metal, Al, is reacted with iron ore, Fe_3O_4 , to produce iron.

The sum of the coefficients when the equation is balanced with smallest whole numbers is

 - 1) 22
 - 2) 23
 - 3) 24
 - 4) 25
 - 5) 26
- The formula of barium peroxide is
 - 1) BaO
 - 2) BaO_2
 - 3) Ba_2O
 - 4) Ba_2O_2
 - 5) BaO_4
- Analysis of a quantity of a compound shows that it contains 0.110 mol of C, 0.055 mol of N, and 0.165 mol of O. Its molecular weight is about 270. How many atoms of carbon are there in the empirical formula for the compound and how many in the molecular formula?
 - 1) Empirical, 1; molecular, 3
 - 2) Empirical, 2; molecular, 2
 - 3) Empirical, 2; molecular, 6
 - 4) Empirical, 3; molecular, 2
 - 5) Empirical, 2; molecular, 3
- The name of a chemical compound ends in “*ide*”; the compound is
 - 1) acidic
 - 2) basic
 - 3) binary
 - 4) an oxide
 - 5) a solid

11. Mass of empty container 3.00 g
Mass of container with hydrate 28.0 g
Mass of container with anhydrous solid 18.0 g

The data above was collected to determine the percent mass of water in a certain hydrate. How should this result be reported?

- 1) 40.0% 4) 64.3%
2) 40.% 5) 72.0%
3) 64%
12. The name of the compound with the formula Na_2SO_3 is
1) sodium sulfide
2) sodium sulfite
3) sodium sulfate
4) sodium sulfur trioxide
5) sodium hydrogen sulfate
13. The formula for iron (III) phosphite is
1) FePO_3
2) Fe_3PO_4
3) $\text{Fe}_3(\text{PO}_4)_3$
4) $\text{Fe}_2(\text{PO}_4)_3$
5) $\text{Fe}_3(\text{PO}_4)_2$
14. $4 \text{ HF (g)} + \text{SiO}_2 \text{ (s)} \rightarrow \text{SiF}_4 \text{ (g)} + 2 \text{ H}_2\text{O (l)}$

If 10. g of HF (formula mass 20. g/mol) reacts with 15. g of SiO_2 (formula mass 60. g/mol), how much water is produced?

- 1) 2.3 g 4) 18. g
2) 4.5 g 5) 36. g
3) 9.0 g
15. $\text{O} \quad \text{C}_2\text{H}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2$

When the above equation is balanced using smallest whole numbers, what is the coefficient of the O_2 ?

- 1) 1 4) 4
2) 2 5) 5
3) 3

16. How many grams of Na_2SO_4 contain 80.00 grams of oxygen atoms?

- 1) 32.80 g 4) 177.5 g
2) 67.40 g 5) 195.4 g
3) 142.0 g

17. Which is the correct formula for cobalt (II) hydroxide?

- 1) Co_2OH
2) CoOH_2
3) CoO_2H
4) Co(OH)_2
5) CoOH

18. The name of NaHCO_3 is

- 1) sodium carbide
2) sodium carbonate
3) sodium hydrogen carbonate
4) sodium hydrogen carbonite
5) sodium bicarbonate

19. In which of the following compounds is the mass ratio of oxygen to nitrogen closest to 1.71 to 1.00?

- 1) NO
2) NO_2
3) N_2O
4) N_2O_3
5) N_2O_5

20. What is the density of CO_2 at 1.5 atm and 25 degrees Celcius?

- 1) 2.7 g/L 4) 16.1 g/L
2) 5.4 g/L 5) 32.2 g/L
3) 10.8 g/L

Answer Key

1. 5

2. 1

3. 1

4. 2

5. 4

6. 3

7. 3

8. 2

9. 3

10. 3

11. 1

12. 2

13. 1

14. 2

15. 3

16. 4

17. 4

18. 3

19. 4

20. 1
