

# CHEMICAL CALCULATIONS

TEST

## Element in a Compound

Date:

1. How many oxygen atoms are there in 0.25 mol of  $\text{N}_2\text{O}_3$ ?



- A) 0.25N    B) 0.5N    C) 0.75N    D) N    E) 1.25N

2. What is the mass of  $\text{Na}_2\text{S}_2\text{O}_7$  that contains 56 g of oxygen? ( $\text{Na}_2\text{S}_2\text{O}_7 = 222 \text{ g/mol}$ )



- A) 11.1    B) 111    C) 222    D) 0.35    E) 22.2

3. What is the volume of  $\text{CO}_2$  gas that contains 64 g of oxygen at STP? (O: 16)



- A) 8.96    B) 4.48    C) 5.6    D) 2.24    E) 11.2

4. How many moles of oxygen is contained in 20 g of  $\text{Fe}_2(\text{SO}_4)_3$ ? (Fe: 56, S: 32, O: 16)



- A) 0.05    B) 0.1    C) 0.15    D) 0.2    E) 0.6

5. How many hydrogen atoms are there in  $\text{C}_2\text{H}_6$  that contains 2.4 g carbon atom? (C:12)



- A)  $3.6 \times 10^{23}$     B)  $1.204 \times 10^{23}$     C)  $3.6 \times 10^{22}$   
D)  $6.02 \times 10^{23}$     E)  $1.8 \times 10^{22}$

6. What is the mole number of  $\text{Na}_2\text{CO}_3 \cdot 7 \text{H}_2\text{O}$  that contains  $1.8 \times 10^{24}$  oxygen atoms?



- A) 0.1    B) 1    C) 0.2    D) 0.3    E) 3

7. How many grams of F atom are there in  $\text{NF}_3$  gas which contains 2.8 g of N atom? (N:14, F:19)



- A) 11.4    B) 5.7    C) 5.6    D) 3.8    E) 1.9

8. What is the mole number of oxygen atoms in 12.4 g of calcium phosphate? (Ca: 40, O: 16, P: 31)



- A) 0.40    B) 0.16    C) 0.32    D) 5.12    E) 0.775

9. What is the number of hydrogen atoms in 33 g of ammonium sulfate? (N: Avogadro #) (N:14, S:32, H:1, O:16)



- A) 0.25N    B) 0.5N    C) 0.75N    D) N    E) 2N

10. What is the mass in grams of ammonium chromate that contains 1.6 g of oxygen? (Cr :52, O: 16, N: 14)



- A) 15.2    B) 7.6    C) 3.8    D) 30.4    E) 1.9

11. What is the mass of sodium atom in 57.2 g sodium carbonate decahydrate? (Na:23, C: 12, H: 1, O: 16)



- A) 0.2    B) 0.54    C) 12.4    D) 9.2    E) 24.8

12. How many atoms are there in  $\text{SO}_3$  whose mass is equal to that of  $3.01 \times 10^{22}$   $\text{SO}_2$  molecules? (N: Avogadro #) (S:32)



- A) 0.04N    B) 0.05N    C) 0.16N    D) 0.2N    E) 0.15.N