

CHEMICAL CALCULATIONS

CLASSIC

Finding Atomic Weight of Element in a Compound

Date: _____

1. A single X atom is 9.3×10^{-23} g. What is the atomic weight of X?
A) 14 B) 16 C) 40 D) 32 E) 56
2. 2 g X_2O contains 1.66 g of X. What is the molecular weight of X_2O ? (O:16)
A) 18 B) 3 C) 62 D) 78 E) 94
3. 0.2 mol X_2Y_3 contains 38.4 g X. What is the molecular weight of X_2Y_3 ? (Y:16)
A) 480 B) 240 C) 192 D) 96 E) 48
4. If 40% of XO_3 is X by weight. Which is the atomic weight of X? (O:16)
A) 120 B) 80 C) 72 D) 48 E) 32
5. 2.7 g of A_2B_5 has 3.01×10^{22} atoms of A. Which is the molecular weight of A_2B_5 ?
A) 27 B) 54 C) 108 D) 135 E) 189
6. If 0.25 mol of $C_nH_{2n}O_n$ is 30 g, what is the value of n? (C:12, H:1, O:16)
A) 1 B) 3 C) 4 D) 5 E) 6
7. Upon drying, a 492 g of $MgSO_4 \cdot X H_2O$ becomes 24 g after all the water was driven off. Which is the value of X in the formula? (Mg:24, O:16, S:32, H:1)
A) 2 B) 5 C) 6 D) 7 E) 10
8. The density of $X_2H_4(g)$ at STP is 1.25 g/L. Which is the atomic weight of X? (H:1)
A) 12 B) 14 C) 31 D) 40 E) 28
9. m grams X_2O_3 contains n mol atom totally. What is the molecular weight of the compound?
A) m/n B) 5m/n C) 5n/m D) n/m E) n.m
10. In X_4C_3 compound, ratio between masses of X and C is 3/1. What is the atomic weight of X atom? (C:12)
A) 27 B) 56 C) 144 D) 108 E) 14
11. 0.1 moles NO_x is 4.6 g, and 0.5 moles N_xO_y is 54 g. What are the values of X and Y respectively? (N:14, O:16)
A) 1, 3 B) 2, 3 C) 2, 4 D) 2, 5 E) 1, 5
12. Mass of N_2X_3 that contains 3.01×10^{23} atoms totally is 7.6 g. What is the atomic weight of X? (N:14)
A) 76 B) 48 C) 16 D) 24 E) 32
13. 44.4 g of $XCO_3X(OH)_2$ compound contains 1 mol of oxygen atom. What is the atomic weight of X atom? (C:12, H:1, O:16)
A) 23 B) 39 C) 56 D) 64 E) 108
14. 60% of $Na_2CO_3 \cdot n H_2O$ compound is oxygen by mass. What is the value of n? (Na_2CO_3 :106, H_2O :18)
A) 1 B) 3 C) 5 D) 7 E) 9
15. Density of C_nH_{2n} compound is a g/L at STP. What is the value of n? (C:12, H:1)
A) 22a B) $22.4a / 14$ C) $22.4a / 12$
D) 11.2a E) $22.4 / a$
16. Mol ratio between 25.6 g SO_2 and 80 g X_2F_4 is $\frac{1}{2}$. What is the atomic weight of X? (S:32, F:19, O:16)
A) 7 B) 12 C) 24 D) 124 E) 62
17. 24 g of X atom and 0.4 mol of Y atom combine to form 29.6 g of X_3Y_2 compound. What is the atomic weight of Y atom?
A) 28 B) 56 C) 14 D) 7 E) 21
18. 40% of the compound X_6N is nitrogen by mass. What is the atomic weight of X element? (N:14)
A) 80 B) 19 C) 7 D) 17 E) 23
19. 20 g of XO_3 and 30 g of Al_2X_3 compounds contain equal numbers of atoms. What is the atomic weight of X atom? (O:16, Al:27)
A) 14 B) 12 C) 32 D) 44 E) 64
20. In 0.1 mol of X_2Y_3 and 0.3 moles of XY_2 compounds, there are totally 7 g of X element. Which one of the followings is the atomic weight of element X?
A) 10 B) 12 C) 14 D) 16 E) 18
21. 8 g of $X_2(YO_4)_3$ compound contains 0.06 mol Y and 2.24 g X. What are the atomic weights of X and Y respectively? (O: 16)
A) 27, 32 B) 27, 30 C) 56, 12 D) 56, 32 E) 40, 32

{ While solving questions, always think 1 mole of compound }