

REVIEW QUESTIONS

Chapter 6

1. Determine the molar mass for each compound shown below:
 - a) $(\text{NH}_4)_2\text{CO}_3$
 - b) $\text{Fe}_3(\text{PO}_4)_2$
2. How many chlorine atoms are present in 45 g of chlorine gas (Cl_2)?
3. How many moles are in 3.4×10^{23} molecules of H_2SO_4 ?
4. How many grams does 5.60×10^{22} molecules of SiO_2 weigh?
5. What mass of chlorine is present in 12.2 g of PbCl_2 ?

6. How many atoms of oxygen are present in 2.15 g of $\text{Ca}_3(\text{PO}_4)_2$?
7. Calculate the mass percent composition of each element in $\text{C}_3\text{H}_9\text{N}$.
8. Silver chloride, used in silver plating, contains 75.27% silver. Calculate the mass of silver chloride required to make 4.8 g of silver plating.
9. The recommended daily allowance (RDA) for iodine is $150 \mu\text{g}/\text{day}$. How many grams of KI must one consume in order to meet this guideline?

10. Determine the empirical formula for a compound with the following composition:

41.1% N

11.8% H

47.1% S

11. A leak in the air conditioning system of an older car releases 55 g of CF_2Cl_2 each month. How much Cl is emitted into the atmosphere by this car in a year?

12. Seawater contains 3.5% NaCl by mass and has a density of 1.02 g/mL. What volume of seawater contains 1.0 g of sodium?

13. A compound whose empirical formula is $\text{C}_3\text{H}_5\text{O}$ has a molar mass of 110.0 g/mol. What is the molecular formula for the compound?

14. What is the mass percent of each element in $C_3H_4O_3$?

15. A 45.2-mg sample of phosphorous reacts with selenium to form 131.6 mg of the selenide. What is the empirical formula of the phosphorous selenide?