

Mole Problems - Set II

Show all work !

1. Determine the molar mass of the following compounds:

(a) $\text{Fe}_3(\text{PO}_4)_2$ _____ (b) hemoglobin $\{\text{C}_{2952}\text{H}_{4664}\text{N}_{812}\text{O}_{832}\text{S}_8\text{Fe}_4\}$ _____

2. Stannous fluoride (SnF_2) is added to toothpaste to prevent tooth decay. In 24 g of SnF_2 , how many moles are present ?

3. How many mol of benzene (C_6H_6) are present in 15.6 g of benzene?

4. How many grams of NH_4Cl are present in 0.4 mol of ammonium chloride?

5. (a) Define molar mass.

(b) Calculate the molar mass of a compound if 0.22 mol of it weighs 48 g.

6. Which sample contains the **largest** number of hydrogen atoms: (circle your answer)

(a) 7.2 g H_2O

(b) 0.4 mol H_2O

(c) 0.8 g H_2

(d) 6.02×10^{23} molecules H_2

7. Which of the following has more atoms: 2.4 g of He or 10.4 g of Cr ? Show the work.

8. Determine the molar mass of each of the following compounds:

(a) H_2SO_4 _____

(b) $Cu(NO_3)_2$ _____

9. Calculate the number of grams contained in 0.42mol of each compound listed in question 8.

(a) _____ g

(b) _____ g

10. How many sugar ($C_6H_{12}O_6$) molecules are there in a sugar cube weighing 3.6g?

11. Calculate the number of moles contained in 200.0g of each compound listed in question one.

(a) _____ mol

(b) _____ mol

12. (a) Calculate the %H, %S and %O found in H_2SO_4

%H = _____
%S = _____
%O = _____

(b) In 80 g of H_2SO_4 how many grams of S are present?

_____ g S