

Practice Sheet 10

1. What is the molar mass of Iron? $Fe_{(s)}$

55.85 g/mol

2. What is the molar mass of $F_{2(g)}$?

38.00 g/mol

3. What is the molar mass of $CO_{2(g)}$?

44.01 g/mol

4. What is the molar mass of $NH_{3(g)}$?

17.04 g/mol

5. What is the molar mass of $Mg(OH)_{2(s)}$?

$$\begin{array}{r} 24.31 \\ 32.00 \\ \hline 58.33 \end{array} \text{ g/mol}$$

6. a. How many moles are in a 120.5 g mass of uranium? U

$m = 120.5 \text{ g}$

$n = ?$

$M = 238.03 \text{ g/mol}$

$m = nM$

$120.5 \text{ g} = n (238.03 \text{ g/mol})$

$n = 0.506 \dots \text{ mol}$

b. How many atoms are in that same sample of uranium?

$$\frac{1 \text{ mol}}{6.02 \times 10^{23} \text{ atoms}} : \boxed{3.05 \times 10^{23} \text{ atoms}}$$

7. What is the mass of 1.75 mol of potassium oxide?

$n = 1.75 \text{ mol}$

$m = ?$

$M = 94.20 \text{ g/mol}$



$m = nM$

$m = (1.75 \text{ mol}) (94.20 \text{ g/mol})$

$= \boxed{164.85 \text{ g}} = \boxed{165 \text{ g}}$

8. What is the mass of 3.01×10^{23} molecules of $H_2S(g)$

$$n = \frac{3.01 \times 10^{23} \text{ molecules}}{6.02 \times 10^{23} \text{ molecules/mol}} = 0.5 \text{ mol}$$

$M = 34.09 \text{ g/mol}$

$m = ?$

$m = nM$
 $= (0.5 \text{ mol}) (34.09 \text{ g/mol})$

$= \boxed{17.045 \text{ g}}$

$\boxed{17.0 \text{ g}}$