

S3 Chemistry Quiz

Basic Chemical Calculation 3

Relative atomic mass: Oxygen = 16, lead = 207

1. 20.7 g of lead metal reacts with oxygen gas to form lead(II) oxide only.
 - (a) Write word equation
 - (b) Write balanced chemical equation
 - (c) Calculate no. of mole of lead used
 - (d) Calculate no. of mole of lead(II) oxide formed
 - (e) Calculate the formula mass of lead(II) oxide
 - (f) Calculate the mass of lead(II) oxide formed

2. M is a metal discovered recently.

19.2 g of M reacts completely with 4.8 g of oxygen to form an oxide, M_2O .

Find the relative atomic mass of M.

Suggested Answer

1. (a) Lead + Oxygen \longrightarrow Lead(II) oxide
- (b) $2\text{Pb}(s) + \text{O}_2(g) \longrightarrow 2\text{PbO}(s)$
- (c) No. of mole of lead = $20.7 / 207 = 0.1$
- (d) No. of mole of lead(II) oxide = 0.1
- (e) Formula mass of lead(II) oxide = $207 + 16 = 223$
- (f) Mass of lead(II) oxide formed = $0.1 \times 223 = 22.3 \text{ g}$

2. Equation: $4\text{M}(s) + \text{O}_2(g) \longrightarrow 2\text{M}_2\text{O}(s)$
No. of mole of oxygen gas = $4.8 / (16 \times 2) = 0.15$
No. of mole of metal M = $0.15 \times 4 = 0.6$
Let the R.A.M. of M = m
 $19.2 / m = 0.6 \quad \Rightarrow \quad m = 32$