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Solution 75
According to question-

$$CuSO_4 \quad + \quad 2NaOH \quad \rightarrow \quad Cu(OH)_2 \quad + \quad Na_2SO_4$$
$$(15.95gm) \quad (8gm) \qquad (9.75gm) \qquad (14.2gm)$$
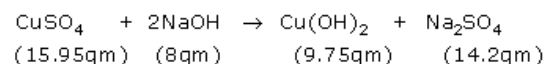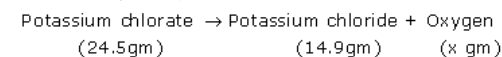
Clearly, in this case
total mass of reactants = (15.95 gm + 8 gm) = 23.95 gm
total mass of products = (9.75 gm + 14.2 gm) = 23.95 gm
Hence, Law of conservation of mass is valid here.
Solution 76
According to question-

$$Potassium\ chlorate \rightarrow Potassium\ chloride + Oxygen$$
$$(24.5gm) \qquad\qquad (14.9gm) \qquad (x\ gm)$$

Let, x gm of oxygen is formed
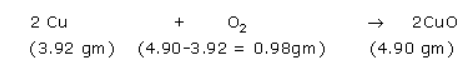Then, according to law of conservation of mass-
24.5 gm = 14.9 gm + x gm
So, x = (24.5 - 14.9) gm = 9.6 gm.
Thus, 9.6 gm of oxygen is formed in the reaction
Solution 77
According to question-
Reaction 1-

$$2\ Cu \qquad\qquad + \qquad O_2 \qquad\qquad \rightarrow \qquad 2CuO$$
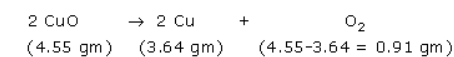$$(3.92\ gm) \quad (4.90-3.92 = 0.98gm) \qquad (4.90\ gm)$$

$$\frac{3.92}{3.92} = 1,\ \frac{0.98}{3.92} = 0.25,\ \frac{4.90}{3.92} = 1.25$$

So, 1 equivalent of Cu reacts with 0.25 equivalent of O_2 to form 1.25 equivalent of copper oxide.

Reaction 2-

$$2\ CuO \qquad \rightarrow 2\ Cu \qquad + \qquad\qquad O_2$$
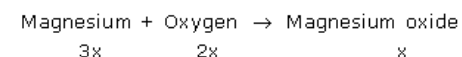$$(4.55\ gm) \quad (3.64\ gm) \qquad (4.55-3.64 = 0.91\ gm)$$

$$\frac{4.55}{3.64} = 1.25,\ \frac{3.64}{3.64} = 1,\ \frac{0.91}{3.64} = 0.25$$

Here again, one can see that 1.25 equivalent of CuO decomposed to form 1 equivalent of Cu and 0.25 equivalent of oxygen.
Hence, law of constant proportion is verified.
Solution 78
According to question-

$$Magnesium + Oxygen \rightarrow Magnesium\ oxide$$
$$3x \qquad\quad 2x \qquad\qquad\qquad x$$

i.e. three equivalents of Mg reacts with 2 equivalents of O2 to form 1 equivalent of MgO.
When mass of Mg = 3x = 24 gm
So, x = 8 gm
Then, mass of oxygen required = 2x = 16 gm

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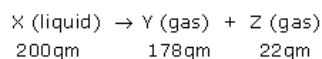Solution 79
When 5 gm of calcium is burnt in 2 gm of oxygen, then 7 gm of calcium oxide is formed. So, calcium and oxygen combine in the fixed proportion of 5:2 by mass.
Now, when 5 gm of calcium is burnt in 20 gm of oxygen, then also 7gm of calcium oxide will be formed because chemical reactions follows law of constant proportion.

As a result, 18 gm of oxygen will be left unreacted.
Solution 80
According to question-

$$X \text{ (liquid)} \rightarrow Y \text{ (gas)} + Z \text{ (gas)}$$
$$\quad 200gm \qquad 178gm \qquad 22gm$$

(a) Liquid X - Water
Gas Y - Oxygen
Gas Z - Hydrogen
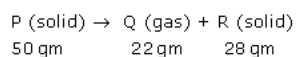(b) mass of Z / mass of Y = 22gm / 178 gm = 1:8
(c) Law of constant proportion is illustrated by this example.
(d) Two sources of liquid X - Sea, Well
(e) Gas Y (oxygen) is necessary for breathing.
Solution 81
According to question-

$$P \text{ (solid)} \rightarrow Q \text{ (gas)} + R \text{ (solid)}$$
$$\quad 50\,gm \qquad 22\,gm \qquad 28\,gm$$

(a) Solid P - Calcium Carbonate ($CaCO_3$)
Gas Q - Carbon dioxide (CO_2)
Solid R - Calcium oxide (CaO)
(b) Total mass of Q and R = 22gm + 28gm = 50gm
(c) Total mass of Q and R (50gm) is equal to mass of reactant
(50gm).
(d) The law of conservation of mass is followed, i.e. total mass of
product is equal to mass of reactant.
(e) Law of conservation of mass is illustrated by the example.

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Solution 01
Ions
Solution 02
(a) Anions ; (b) Cations
Solution 03
The formula mass of an ionic compound is the relative mass of its
'formula unit' as compared with the mass of a Carbon-12 atom
taken as 12 units.

********** END *********