Simple chemical equations

-it is the representation of a chemical reaction with symbols and formula of the substances

Red on page 73 example

Steps in writing simple chemical equation

Step1- write a word equation for reaction

Step 2- Change the word equation to a chemical equation

Step 3- Balance the equation so that it obeys the law of conservation of mass.

Example:-the reaction between oxygen and magnesium

Stpe1- magnesium oxygen → magnesium oxide (word equation)

Step2- $M_g + O_2 \rightarrow$ Mgo (Chemical equation)

Step3- $2M_g + O_2 \rightarrow$ 2Mgo (Balanced Chemical equation)

Balanced Chemical equation

- It is an equation in which the total no of atoms on hand side is equal to the total no of atoms on the right hands side

There are two types of methods to balance chemical equation these are inspection and LCM methods

1. Inspection method – is a trial and error method

Example- 1and 2 on page 75 read

2. Least common multiple (LCM) method

It is mathematical methods of balancing chemical equations

Example - Aluminum burns oxygen produce aluminum oxide

Step 1-Write the word equation

Aluminum +oxygen ⟶ Aluminum oxide

Step 2- Change the word equation to formula equation

$Al + O_2 Al_2O_3 \longrightarrow$

Step 3- Write the total valence no of each of the elements

above their symbols

$Al^3 + O^4{}_2 Al^6{}_2 + O^6{}_3 \longrightarrow$

Step 4- Find the LCM of the total valance no and write it on

arrow

$Al^3 + O^4{}_2 \quad {}_{12}Al^6{}_2 + O^6{}_3$

Step 5- Divide the LCM by each to valance no and use the

dividend as the coefficient

$\frac{12}{3}Al_3 + \frac{12}{4}O_2 \frac{12}{6}Al_2 + O_3 \longrightarrow$

$4Al + 3O_2 2Al_2O_3 \longrightarrow$

(Read from page 76-81

Unit Four
THE STRUCTURE OF SUBSTANCES

4.1 Historical development of the atom nature of substances

There two theories about nature of atoms

1. Aristotle- says'' any matter can be divided without a limit (matter is continuous)
2. Democritus – says apiece is riched where further division of any material is possible (matter is discrete)

Atomic Theory

Dalton's Atomic Theory

John Dalton is the father of modern atomic theory

The main points of Dalton's atomic theory

Matter consists of very small particles called atoms

Atoms are indivisible

All atoms of a given element is identical etc.

Modern Atomic Theory

- There are six mains points of modern atomic theory

Read on page (89-90)

The structure of the atom

The subatomic particles

An atom contains three fundamental subatomic particles proton, electron and neutron (Read from page 91-93)

Proton- is a tiny positively charged particles found in the nucleus

Electron- is a negatively charged particles

Neutron- is a tiny neutral particle found in the nucleus.