ATOMIC STRUCTURE #4

Isotopes are whose nuclei have the same atomic number but different mass numbers, that is, the nuclei have the same number of protons but different numbers of neutrons. For example:

Hydrogen (Protium)	→	$^{1}_{1}H$
Deuterium	→	$^{2}_{1}H$
Tritium	→	$^{3}_{1}H$

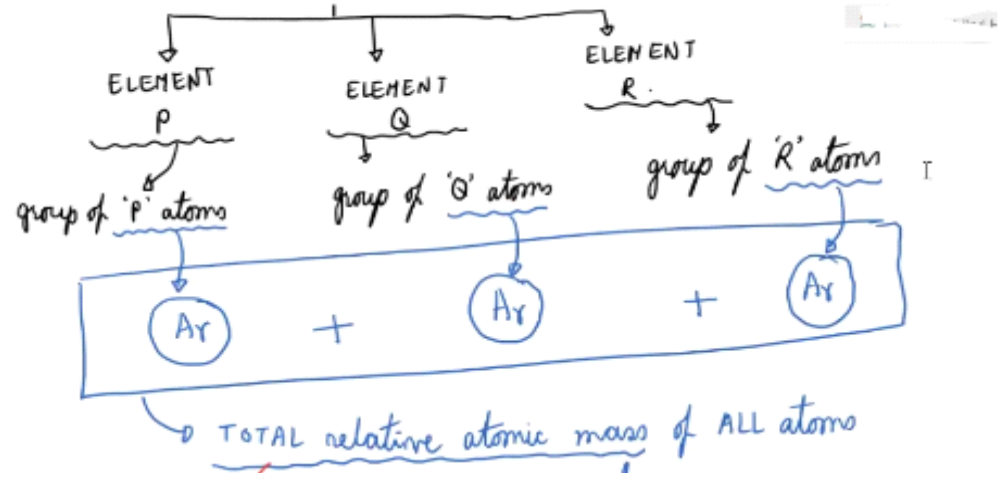
Since, elements in nature are distributed randomly, isotopes occur. Since, each isotope has a different mass number, it is very important to find out the average mass number. This average mass number is referred to as the Relative Atomic Mass of an element.

The **Relative Atomic Mass (A_r)** is defined as the weighted mean/average mass of all isotopes of an element compared with $\frac{1}{12}$th the mass of an atom of Carbon – 12.

In simple words, the Relative Molecular Mass of compounds is the total of the relative atomic masses of the individual constituent elements. Untitled - Notepad

COMPOUND
└ group of TWO/MORE DIFFERENT ELEMENTS which are CHEMICALLY BONDED together.
group of ATOMS
IDENTICAL.

Compounds



→ TOTAL relative atomic mass of ALL atoms in the compounds

is called

RELATIVE FORMULA / MOLECULAR MASS (RFM / RMM / M_r)

Question :

Find the **relative formula / molecular mass** of the followings :

① $LiCl$

$M_r = 7 + 35.5$

$= 42.5$.

② KBr

$M_r = 39 + 80$

$= 119$.

③ CaF_2

$RFM = 40 + (19 \times 2)$

$= 78$

④ $MgCl_2$

$M_r = 24 + (35.5 \times 2)$

$= 95$.

⑤ Al_2O_3

$M_r = (27 \times 2) + (16 \times 3)$

$= 102$.

⑥ $Ca(OH)_2$

$M_r = 40 + \{(16+1) \times 2\}$

⑦ $(NH_4)_2SO_4$

$M_r = [\{14 + (1 \times 4)\} \times 2] + 32 + (16 \times 4)$

$= 132$.