## DALTON'S ATOMIC THEORY

Dalton proposed the atomic theory on the basis of the law of conservation of mass and law of definite proportions. He also proposed the law of multiple proportion as a logical consequence of this theory. The salient features of this theory are

- (a) Each element is composed by extremely small particles called atoms.
- (b) Atoms of a particular element are all alike but differ with the atoms of other elements.
- (c) Atom of each element is an ultimate particle, and has a characteristic mass but is structureless.
- (d) Atom is indestructible i.e. it can neither be destroyed nor created by simple chemical reactions.
- (e) Atom of an element takes part in chemical reaction to form molecule.
- (f) In a given compound, the relative number and rule of atom are same.
- (g) Atoms of different elements combine in fix a ratio of small whole numbers to form compound atoms (now called molecules).

## Merits and Demerits of Dalton's theory :

## (i) Merits :

- (a) Dalton's theory explains the law of conservation of mass and some other laws of chemical combination.
- (b) Atoms of elements take part in chemical reaction is true till today.
- (ii) Demerits :
- (a) There is no mention of atomic weights of elements.
- (b) He could not explain that why do atoms of same element combined with each other.
- (c) The law of definite proportion fails if different isotopes are used.