SUBPARTICLES OF MATTER

Matter has been discovered to contain particles. The discovery is called the Atomic Theory. It was first postulated by an English Scientist called John Dalton. Dalton's Atomic Theory has the following main idea:

a. All matter is made up of small indivisible particles called atoms.
b. Atoms can neither be created not be destroyed.
c. Atoms of the same element are alike in every aspect and differ from atoms of other elements.
d. When atoms combine with one another, they do so in simple ratios.

Dalton used his theory to explain the laws of chemical reaction such as the laws of conservation of mass, definite proportion, multiple proportion and reciprocal proportion. But the theory could not explain new discoveries like isotopes, electrolysis and some aspects of organic chemistry.

Other scientific studies led to what is now known as the modern atomic theory. The main features are:

a. Matter is made up of small particles. These particles could be either positively or negatively charged while some are electrically neutral.
b. Atoms of the same element are alike but may differ in masses. Such atoms are called isotopes.
c. Atoms of different elements can combine to form compounds (molecules).
d. Two or more atoms of the same element can combine to form a molecule.
e. A molecule is the smallest part of a compound that exist independently. When broken down, it no longer bears the identity of the compound.
f. Although the smallest part of an element is the atom, some atoms exist as molecules. For example, oxygen, chlorine, nitrogen, etc.
g. The molecules of a compound have a definite composition and structure.

In essence, the partculate nature or theory of matter states that matter is made up indivisible particles called atoms. Atoms can exist as molecules or ions. As such we can consider atoms, molecules and ions as the subparticles of matter.