

## Answer on Question#37854-Chemistry-Inorganic Chemistry

### Question

Describe the postulates of Dalton's Atomic Theory.

### Answer

**I. All matter is made of atoms, which are indivisible.**

(The indivisibility of an atom was proved wrong, for, an atom can be further subdivided into protons, neutrons and electrons).

**II. Atoms of the same element are similar in shape and mass, but differ from the atoms of other elements.**

(This is wrong because atoms of some elements vary in their mass and density. Such atoms of the same element having different masses are called isotopes. For example, chlorine has two isotopes having mass numbers 35 a.m.u and 37 a.m.u. The statement that atoms of different elements are different in all respects has been proved wrong in certain cases like argon and calcium atoms, which have the same atomic mass of 40. Such atoms of different elements that have the same atomic mass are called isobar)

**III. Atoms cannot be created or destroyed.**

(It is wrong, because in nuclear reactions transformation of one atom (nucleus) into another is possible)

**IV. Compounds are formed by a combination of two or more different kinds of atoms, which may combine with each other in a fixed, simple, whole number ratio.**

(This is not seen in complex organic compounds, e.g. in sugar  $C_{12}H_{22}O_{11}$ )

**V. A chemical reaction is a rearrangement of atoms. Atoms are the smallest unit of matter that can take part in a chemical reaction.**

(This is the only postulate being completely true)