Assignment - I

Give a brief description about the contributions of Robert Boyle and Antoine Lavoisier for the development of chemistry

Ans) **Antoine**-Laurent **Lavoisier**, a meticulous experimenter, revolutionized **chemistry**. He established the law of conservation of mass, determined that combustion and respiration are caused by **chemical** reactions with what he named "oxygen," and helped systematize **chemical** nomenclature, among many other accomplishments. Dec 11, 2017

Every general-**chemistry** student learns of **Robert Boyle** (1627–1691) as the person who discovered that the volume of a gas decreases with increasing pressure and vice versa—the famous **Boyle's** law. A leading scientist and intellectual of his day, he was a great proponent of the experimental method.

Assignment-II

Identify other examples of Triads

Ans) Other examples include

(i) $\mathbf{Ca(40), Sr(88)}$ and $\mathbf{Ba(137)}$

(ii) $\mathbf{Cl(35.5), Br(80)}$ and $\mathbf{I(127)}$.

Dobereiner's triads: *Dobereiner* (1829) arranged the elements of similar properties in groups of three called ***traids***. In such a triad, the atomic weight of the middle element was found to be approximately the average of the atomic weights of the other two. e.g., Cl (35.5), Br (81.25) and I (127). However, this form of classification had only limited applications.

Newland's Law of Octaves: *Newlands* (1865) arranged elements in the order of increasing atomic weights. He noticed that every succeeding eighth element repeated the properties of the first like the eighth note on an octave in music. The generalisation was known as law of *octaves*. However, the law of octaves could not be applied beyond calcium. Moreover, with the discovery of noble gases, the eigth element cannot be a similar element.

Lothar Meyers Atomic Curve

He presented the classification in the form of curve between atomic volume and atomic mass. According to him the properties of the elements were the periodic function of their atomic volume curve.