Symmetry:- Symmetry is a geometrical properties in which the structure is proportion and well balanced.

Symmetry Operations:-

A symmetry operation is a movement of a body such that, after the movement has been carried out, every point of the body is coincident with an equivalent point (or the same point) of the body in its original orientation.

Ultimately we can define the symmetry operation as the geometrical operation such as reflection, rotation, inversion etc. which leads to a configuration indistinguishable from the original.

It means the two configurations are not exactly identical, but they look like in all respects.

Symmetry Elements :-

A symmetry elements is a geometrical entity such as a line, a plane, or a point with respect to which one or more symmetry operations may be carried out.

Role of symmetry elements and Symmetry Operations

Symmetry elements and symmetry operations are so closely interrelated because, the operation can be defined only with respect to the elements, and the same time the existence of a symmetry element can be demonstrated only by showing that the appropriate symmetry operation exist. Thus, since the existance of the elements is contingent on the existence of the operation or operations and vice-versa. The related types of elements and operations are tables as follows.

Symmetry Elements		Symmetry Operation
1. Centre of Symmetry or Inversion Centre	⟶	Inversion of all atoms through the centre
2. Plane	⟶	Reflection in the plane.
3. Proper axis	⟶	One or more rotation about the axis.
4. Improper axis	⟶	One or more repetitions of the sequence: rotation followed by reflection in a plane perpendicular to the rotation axis.