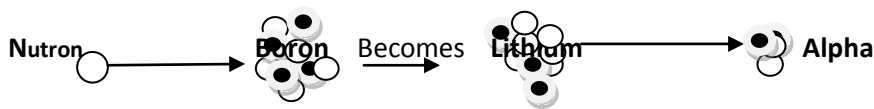


Transmutation

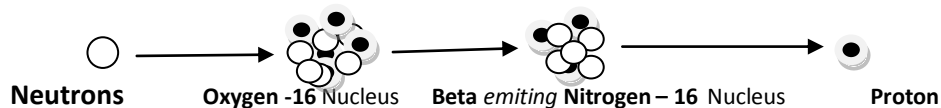
Transmutation is nothing but a transformation of one element into another by nuclear reaction. Compound Nucleus is formed absorbing a neutron. This compound nucleus afterward loses its energy by the emission of charged particles either alpha particle or proton. This process will give a different nucleus. This formation of different type of nucleus from compound nucleus is called Transmutation.

NUTRON ALPHA REACTION (n, α)



Reaction in which Boron nucleus captures the neutron and gives out Lithium and alpha particle.

Neutron – Proton Reaction (n, p)



Reaction in which Oxygen -16 nucleus captures the neutron and gives out Nitrogen-16 which emits Beta rays and proton particle. Nitrogen-16 is a radioactive element with a half-life of 7.1 seconds. So this reaction is called an Activation Reaction as it forms a radioactive Nitrogen-16 nucleus.

Reaction in which Oxygen -16 nucleus captures the neutron and gives out Nitrogen which emits Beta rays and proton particle.