

Write down Einstein's postulates of special theory of relativity.

The special theory of relativity was formulated in 1905 by Albert Einstein. It has two postulates:—

a) The laws of physical phenomena are the same when stated in terms of two systems of reference in uniform translatory motion relative to each other.

An inertial system is defined as a co-ordinate frame of reference within which the law of inertia holds.

According to Newton a body on which no external force is applied it will move with uniform velocity. Thus from this postulates the mathematical form of physical law remains the same for any two observers moving with constant velocity. It is thus not possible to distinguish one inertial system from another, i.e. there are no ~~preferred~~ preferred inertial system.

(b) The velocity of light in vacuum is constant and is independent of the velocity of observer or the source.

According to Galilean transformation this postulates is not true. But experimentally it is confirmed that the velocity of light calculated by any method is constant.