

Class XI Physics NOTES

This momentum of a body associated with its rotational motion is called 'angular momentum'. We shall later read that

Angular momentum (L) = moment of inertia (I) × angular speed (ω)

According to the law of conservation of angular momentum:

"If the total external torque acting on a system is zero, angular momentum of the system remains constant".

- Torque plays the same role in rotational motion as force plays in translational motion.

(d) Law of conservation of charge:

"It means that charges (in the form of electron) are neither created nor destroyed, but are simply transferred from one body of another".

Einstein's Mass- Energy Equivalence

According to Einstein's theory mass is equivalent to energy.

"When a material body of mass 'm' (kg) is converted completely into energy the amount of energy liberated (in J) is $E = mc^2$ "

Where, c is the speed of light in free space.

In a nuclear process mass gets converted to energy (or vice-versa).

This is the energy which is released in nuclear power generation and nuclear explosion.