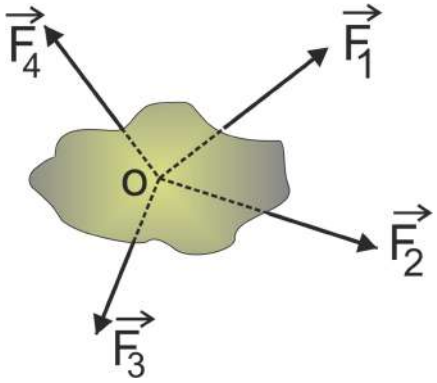
**Concurrent Forces:**

All those forces which act on a body such that their line of action intersect at the same point, are called concurrent forces.




**Equilibrium of a body (Under concurrent forces)**

When a body is in complete rest it is said to be in complete equilibrium (i.e., the body is neither making translational or rotational motion).

For the body to be at rest:

$\vec{a} = 0$

$\because \sum \vec{F} = m\vec{a} = 0$

$\vec{F}_1 + \vec{F}_2 + \vec{F}_3 \ldots\ldots\ldots\ldots = 0$ ..... (i)

"That is for a body to be in equilibrium the vector sum of all the forces acting on it must equal to O."

**Case – I:** When the body is in equilibrium under the acceleration of two external forces. For this the vector sum of two forces must be O.

i.e, $\vec{F}_1 + \vec{F}_2 = 0$

or $\vec{F}_2 = -\vec{F}_1$

That is the remain equilibrium under action of acceleration only if the forces are equal and opposite.