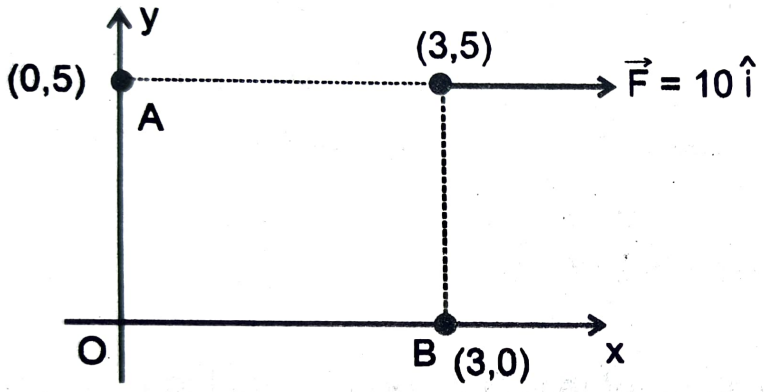
Find out torque about point A, O and B



Solution :

Torque about point A , $\vec{\tau}_A = \vec{r}_A \times \vec{F}, \vec{r}_A = 3\hat{i}, \vec{F} = 10\hat{i}$

$\vec{\tau}_A = 3\hat{i} \times 10\hat{i} = 0$

Torque about point B , $\vec{\tau}_B = \vec{r}_B \times \vec{F}, \vec{r}_B = 5\hat{j}, \vec{F} = 10\hat{i}$

$\vec{\tau}_B = 5\hat{j} \times 10\hat{i} = -50\hat{k}$

Torque about point O , $\vec{\tau}_O = \vec{r}_O \times \vec{F}, \vec{r}_O = 3\hat{i} + 5\hat{j}, \vec{F} = 10\hat{i}$

$\vec{\tau}_O = (3\hat{i} + 5\hat{j}) \times 10\hat{i} = -50\hat{k}$