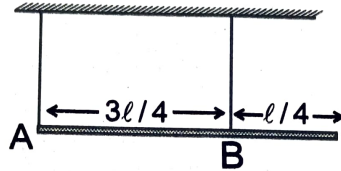A uniform rod of length ℓ, mass m is hung from two strings of equal length from a ceiling as shown in figure. Determine the tensions in the strings ?

Solution :

$$T_A + T_B = mg \qquad \ldots\ldots\ldots\text{(i)}$$

Torque about point A is zero

So, $T_B \times \dfrac{3\ell}{4} = mg \dfrac{\ell}{2} \qquad \ldots\ldots\ldots\text{(ii)}$

From eq. (i) & (ii),

$T_A = mg/3$, $T_B = \quad 2mg/3$.