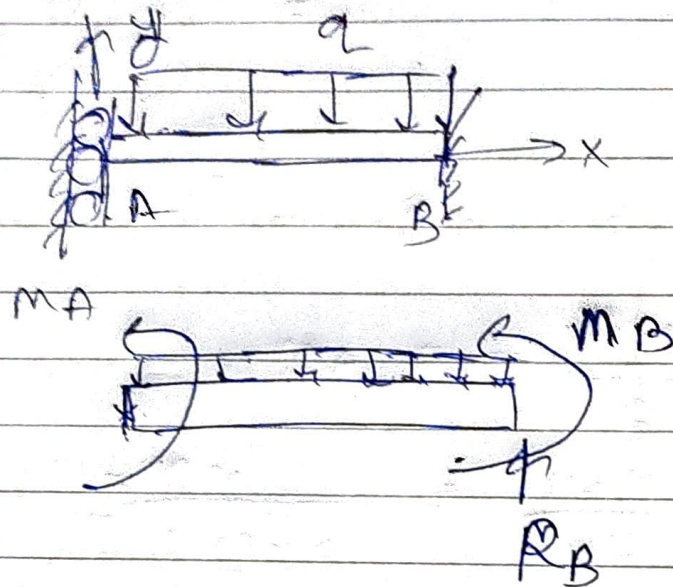


Roll Number :- 19NA10011

Q



Q

Q

$$R_B = qL$$

$$M_A + M_B + R_B L = \int_0^L q x dx$$

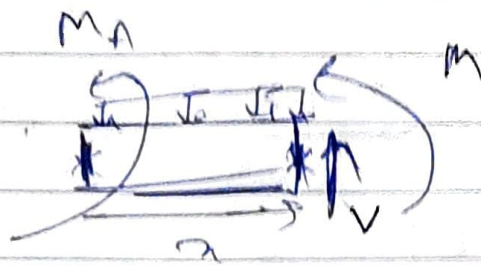
$$M_A + M_B + R_B L = \frac{qL^2}{2}$$

$$M_A + M_B = \frac{qL^2}{2} - R_B L$$

$$= \frac{qL^2}{2} - qL^2$$

$$M_A + M_B = -\frac{qL^2}{2}$$

$$M_A = -\frac{qL^2}{2} - M_B$$



$$V = qx$$

or

$$M_A + Vx + M = \frac{qx^2}{2}$$

$$M = \frac{qx^2}{2} - Vx - M_A$$

$$= \frac{qx^2}{2} - qx^2 - M_A$$

$$M = -\frac{qx^2}{2} - M_A$$

$$EI \nabla'' = -\frac{qx^2}{2} - M_A$$

$$EI \nabla' = -\frac{qx^3}{2 \times 3} - M_A x + C_1$$

$$EI \nabla = -\frac{qx^4}{2 \times 3 \times 4} - \frac{M_A x^2}{2} + C_1 x + C_2$$

$$V(L) = 0$$

$$V'(L) = 0$$

$$V'(0) = 0$$

$$EI \nabla''(0) = C_1 = 0$$

$$C_1 = 0$$

$$\frac{1}{EI} \int -q$$



$$EI V' = \frac{-q x^3}{2 \times 3} - M_A x$$

$$V'(L) = 0$$

$$EI V'(L) = 0$$

$$\frac{-q}{2 \times 3} (L)^3 - M_A L = 0$$

$$M_A = - \frac{q L^2}{6}$$

$$EI V = \frac{-q x^4}{2 \times 3 \times 4} - \frac{M_A x^2}{2} + C_2$$

$$EI V = \frac{-q x^4}{2 \times 3 \times 4} - \left( \frac{-q L^2}{6} \right) \cdot \frac{x^2}{2} + C_2$$

$$= \frac{-q x^4}{2 \times 3 \times 4} + \frac{q L^2 x^2}{6 \times 2} + C_2$$

$$V(L) = 0$$

$$\frac{-q}{2 \times 3 \times 4} (L)^4 + \frac{q L^2 (L)^2}{6 \times 2} + C_2 = 0$$

$$- \frac{q L^4}{24} + \frac{q L^4}{12} + C_2 = 0$$

$$C_2 = - \frac{q L^4}{12} + \frac{q L^4}{24}$$

$$= \frac{q L^4}{12} \left( -1 + \frac{1}{2} \right)$$

$$C_2 = - \frac{q L^4}{24}$$

$$EI V = \frac{-qn^4}{2 \times 3 \times 4} + \frac{qL^2 n^2}{6 \times 2} - \frac{qL^4}{24}$$

$$EI V = \frac{-qn^4}{24} + \frac{qL^2 n^2}{12} - \frac{qL^4}{24}$$

$$V(n) = \frac{1}{EI} \left( \frac{-qn^4}{24} + \frac{qL^2 n^2}{12} - \frac{qL^4}{24} \right)$$