[redacted] Paper Mechanics to [redacted]
of Materials

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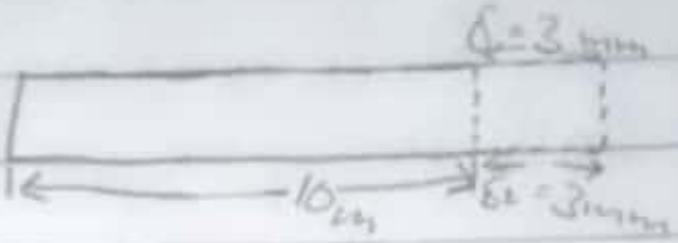

Sol:=>

Temperature at which δt = 3mm

$= \delta t = \alpha L (\Delta T)$

$= \delta t = \alpha L (Tf) - Ti)$

$= 3 = (11.7 * 10 \text{power} - 6)(10000) Tf - 25)$

$= Tf = 36.597$

= Required Stress:

$= \delta = \delta t$

$\delta \frac{2}{E} = \alpha L (\Delta T) = \alpha E (Tf - Ti) =$

$(11.7 \times 10 \text{pwr} - 6)(250000)(88.597 - 25)$

$= \delta = 84 MPa$ Ans:-

Q3 D = 600mm
d = 300 mm
T = 60 KN-m
L = 5 m

Sol Required

As we know that

$$T = \pi/16 * t * D(4) - d(4)/D$$

$$60 * 1000000 = \frac{3.142}{16} * t * \frac{600(4) - 300(4)}{600}$$

$$t = \frac{60 * 1000000}{\frac{3.142}{16} * t * \frac{2400 - 2}{2398}}$$

$$60 * 1000000 = \frac{3.142}{16} * t * 2398$$

$$\frac{60 KNm}{60 KNm} = \frac{0.196 * t * 2398}{60 KNm}$$

$$t = \frac{0.196 * 2398}{60 NNm} = 7.83 KNm$$

f/R - G.O// R - D/2 = 600/2

= 300 mm into Radian.

Q 2

⇒ Sol:⇒

$$\delta = \delta_T + \delta_{st}$$

$$\frac{P\Delta}{E} = \alpha \Delta (\Delta T) + \frac{P\Delta}{AE}$$

$$\delta = \alpha \Delta (\Delta T) + \frac{P\Delta}{AE}$$

$$\delta = \alpha E (\Delta T) + \frac{P\Delta}{AE}$$

$$200 = (11.7 \times 10^{-6})(200000)(60^\circ) + \frac{5000}{A}$$