

Q. 5

$$\sigma = \frac{pD}{2t}$$

$$\text{If } \sigma = 0.4 \times 120 \text{ MN/m}^2$$

$$p = \frac{\sigma \times 2t}{D} = \frac{0.4 \times 120 \times 10^6 \times 2 \times 0.7 \times 10^{-3}}{22 \times 10^{-3}}$$

$$= 3.06 \times 10^6 \text{ N/m}^2$$

$$= \underline{3060 \text{ kPa}}$$

i.e. approximately 30 times atmospheric pressure.