

Q.3 (2)

Subst. in values, we obtain

$$\omega = \sqrt{\frac{9.8 \text{ m/s}^2}{9 \times 10^3 \text{ m}}} = 32.99 \frac{\text{rad}}{\text{s}} \approx 33 \frac{\text{rad}}{\text{s}} \quad (4)$$

Step 2: For the part we obtain using all

$$K.E. = P.M. \text{ and } \omega = P.M. = \frac{K.E.}{P.M.} \quad (1)$$

$$\frac{1}{2} I \omega^2 = \frac{1}{2} P.M. \quad (2)$$

Step 3: For the part we obtain using all

$$\frac{1}{2} I \omega^2 = \frac{1}{2} P.M. \quad (3)$$

where, (1) and (2) hold

$$\frac{1}{2} I \omega^2 = \frac{1}{2} P.M. \quad (4)$$