

Part IIB 4D6 - 2015

Answers

1. (a) $f_1 = 0.25\sqrt{\frac{EI}{mL^4}}$; (b) 0.713 m

2. (a) $u_{g,\max} = 1.12 \text{ m}$, $\ddot{u}_{g,\max} = 1g$, $S_{d,\max} = 1.12 \text{ m}$; (b) $u_g = \frac{2.5T_n^2}{4\pi^2\sqrt{2\mu-1}}$; (c) $k = 15 \text{ kN m}^{-1}$

3. (c) $G_{\max} = 73.9 \text{ MPa}$, $v_s = 217.8 \text{ m/s}$; (e) $G_{\max} = 3.6 \text{ MPa}$, $v_s = 42.6 \text{ m/s}$;

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