

General Solution

$$y = A + Bx + \frac{w}{24eI} [6L^2x^2 - 4Lx^3 + x^4]$$

at $y=0$, and $\frac{dy}{dx} = 0$ at $x=0$

$$0 = A$$

$$\frac{dy}{dx} = B + \frac{w}{24eI} [12L^2x - 12Lx^2 + 4x^3]$$

$$0 = B$$

particular solution

$$y = \frac{w}{24eI} [6L^2x^2 - 4Lx^3 + x^4]$$

$$(2) EI \frac{d^2 y}{dx^2} = \frac{w}{2} (L - xc)^2$$

$$EI m^2 = 0$$

$$m^2 = 0 \quad m = \pm 0$$

$$y = C_1 (A + Bxc)$$

$$y = A + Bxc$$

P.I

$$y = Fxc^2 + Gxc^3 + Hxc^4$$

$$\frac{dy}{dx} = 2Fxc + 3Gxc^2 + 4Hxc^3$$

$$\frac{d^2 y}{dx^2} = 2F + 6Gxc + 12Hxc^2$$

$$EI (2F + 6Gxc + 12Hxc^2) = \frac{w}{2} (L - xc)^2$$

$$2FsI + 6(GcI + 12Hc^2I) = \frac{w}{2} (L - xc)^2$$

$$4D + 4D = 6$$

$$8D = 6$$

$$D = 6/8 = 3/4$$

$$4C + 4D = 0 \quad \cdot \quad 4C + 4\left(\frac{3}{4}\right) = 0$$

$$4C + 3 = 0 \quad \cdot \quad 4C = -3$$

$$C = -3/4$$

$$P.F = y = -3/4 \cos \theta + 3/4 \sin \theta$$

General Solution

$$y = e^{-2\theta} \left(C \cos \theta + D \sin \theta \right) - 3/4 \cos \theta + 3/4 \sin \theta$$

$$\text{ii) at } \theta = \infty \quad \text{end } dy/d\theta = 0 \quad \text{at } dy/d\theta = 0$$

DINDIMESI, D. MAYDWA
151EN902 | Duf2

Computer Engineering

1. d^oy (2)

$$\frac{d^2y}{dt^2} + 4dy + 5y = 6\sin t$$

$$m^2 + 4m + 5 = 0$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-4 \pm \sqrt{4^2 - 4(1)(5)}}{2(1)}$$

$$= \frac{-4 \pm \sqrt{16 - 20}}{2}$$

$$= \frac{-4 \pm \sqrt{-4}}{2}$$

$$z = \frac{-4 \pm \sqrt{-4}}{2}$$

$$= \frac{-4 \pm 2j}{2}$$