Solution / Marking scheme

Oct. 2019 Insem (T1)

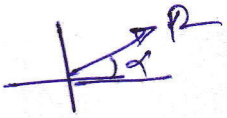
Course Name: Mech. of struct. - I

Course Code: CVUA21183

(pattern 2018)

Q.NO1: (a) Defi — (2) Marks

$\Sigma fx = 152.85\,N$ — (2) Marks



$\Sigma fy = 50.07$ — (2)

$R = 160.84\,N$ — (1)

$\alpha = 18.13^0$ — (1)

(b) $\Sigma fx = -274.09\,N$ — (2)

$\Sigma fy = -257.10\,N$ — (2)

$R = 375.80\,N$ — (1)

$\alpha = 43.16^0$ — (1)

Point of Appl.: $x = 1.004\,m$ left of A. — (2)

Q.NO2: (a) Types of Supports — (2)

FBD — (2)

$R_A = 1.34\,kN$ — (2)

$R_B = 3.66\,kN$ — (2)

(b) Comment — (2) Marks

FBD — (1) Marks

$N_2 = 4250\,N$ — (2) Marks

$N_3 = 4872\,N$ — (2) Marks

$P = 934.6\,N$ — (1) Mark

Q.NO3 — (a)

$\bar{x} = 10.88\,m$ — (2)

$\bar{y} = 9.32\,m$ — (2)

(b) $I_{xx} = 1.6 \times 10^5\,mm^4$ — (1)

$I_{yy} = 9.10 \times 10^4\,mm^4$ — (1)

$k_x = 11.54\,mm$ — (1)

$k_y = 8.66\,mm$ — (1)

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