



UG-6105
B. Arch. - II (Sem. - III) Examination
May/June - 2012
Structural Design & Systems - III
(New Course)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

<p>नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B. Arch. - II (Sem. - III)</p> <p>Name of the Subject : Structural Design & System - III (New Course)</p> <p>Subject Code No. : 6 1 0 5 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : □ □ □ □ □ □</p> <p>Student's Signature</p>
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- (2) Assume suitable data & specifically mention it.
- (3) Figures to the right indicate full marks.
- (4) Use of Nonprogrammable scientific calculator is permitted.

- 1 Attempt following questions : 5
 - (i) What is neutral axis ?
 - (ii) What is distribution factor ?
- 2 (a) Calculate deflection & slope at point 'c' for a beam shown in Fig.-1. 6

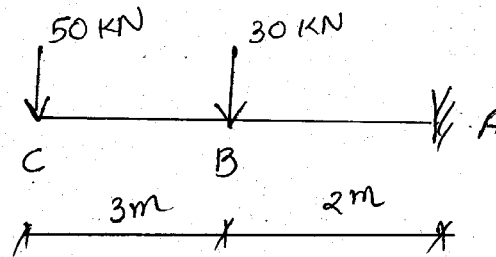


Fig.-1

OR

- (b) Calculate deflection & slope at point 'b' for a beam shown in Fig.-2.

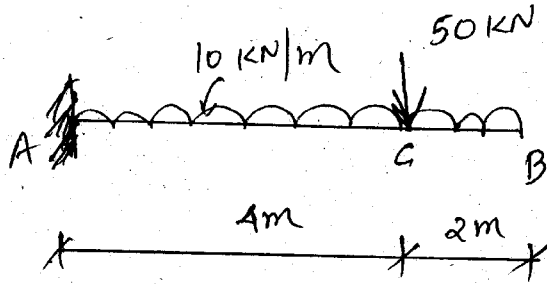


FIG-2

- 3 Calculate & draw shear stress diagram for a beam shown in fig-3a, cross section of beam is shown in fig-3b. 12

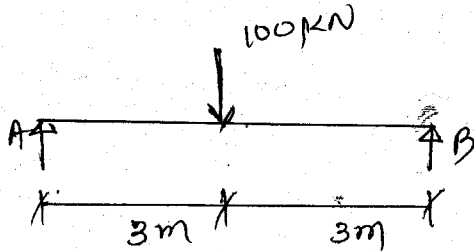


Fig - 3(a)

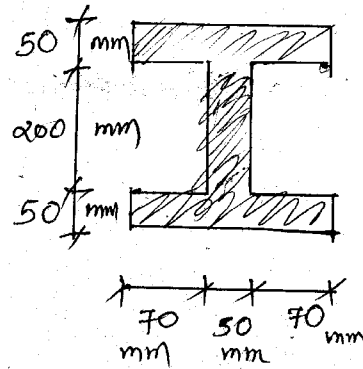


Fig-3(b)

OR

- 3 Calculate stress at points A,B,C & D for a column subjected to 300 kN eccentric load as shown in fig-3.

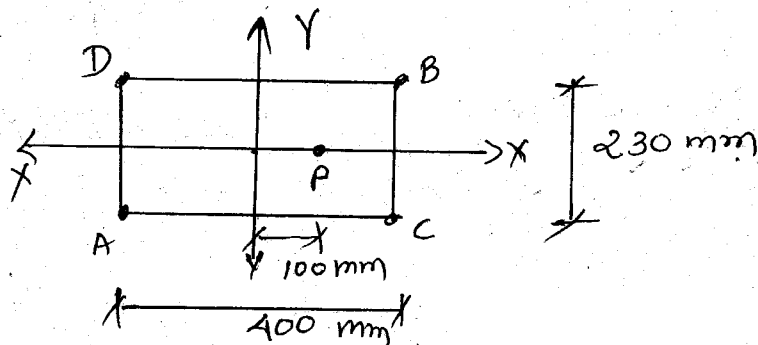


Fig.3

- 4 Calculate & draw bending stress diagram for a beam shown in fig-3a, cross section of beam is shown in Fig.4. 10

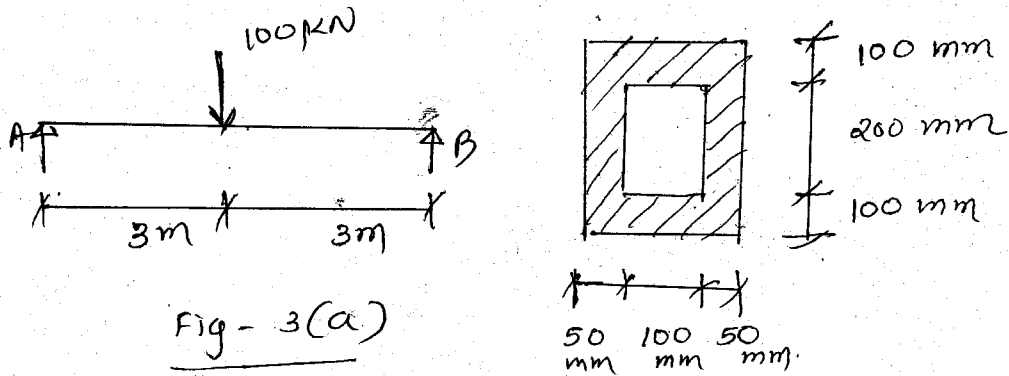


Fig. 4

- 5 Calculate Euler's crippling load for a rectangular column of size $200\text{mm} \times 100\text{mm}$ both the ends are hinged. Actual length of column is 3m . Modulus of elasticity is $2 \times 10^5 \text{ N/mm}^2$. 5
- 6 Calculate & draw bending moment diagram using Moment Distribution method for a beam shown in Fig. 5. 12

