



RAN-1912000101040001

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**B.Arch-1, 2nd Sem Examination**

**March / April - 2019**

**Structural Design & Systems - II D Syllabus (new scheme)**

**Time: 2 Hours ]**

**[ Total Marks: 30**

**सूचना : / Instructions**

(1)

नीचे दृशविवेक निशानीवाणी विगतो उत्तरवही पर अवश्य लक्षणी.  
Fill up strictly the details of signs on your answer book

Name of the Examination:

B.Arch-1, 2nd Sem

Name of the Subject :

Structural Design & Systems - II

Subject Code No.: 1912000101040001

Seat No.:

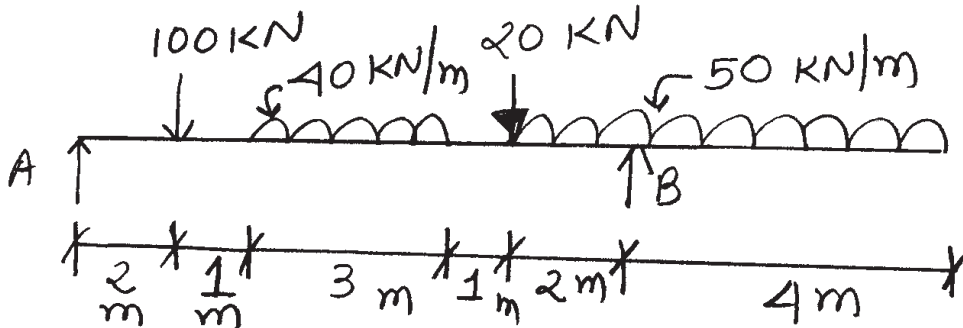
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Student's Signature

- (2) Assume Suitable data & specifically mention it.
- (3) Figures to the right indicate full marks.
- (4) Use of Nonprogrammable scientific calculator is permitted
- (5) Draw sketches wherever is required

**Q. 1** Calculate & Draw Shear Force & bending moment diagram for the beam shown in Fig-1

**12**



**OR**

RAN-1912000101040001 ]

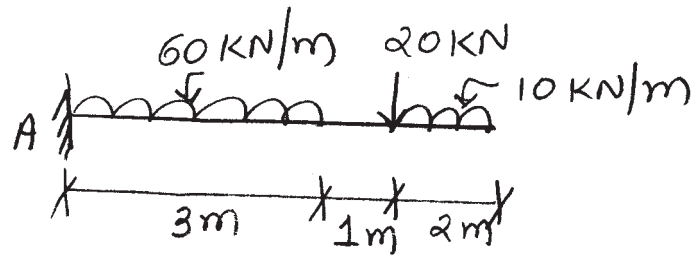
[ 1 ]

[ P.T.O. ]

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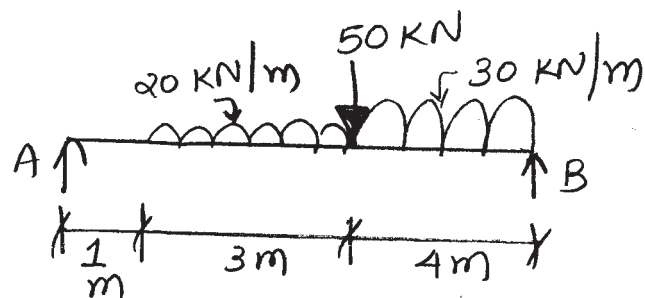
- Q. 1 (a) Calculate & Draw Shear force & Bending moment diagram for the Beam shown in fig-2

06



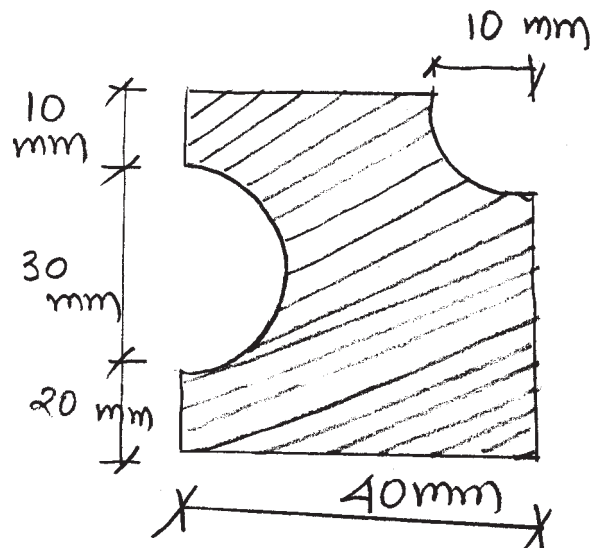
- (b) Calculate & Draw Shear force & Bending moment diagram for the Beam shown in fig -3

06



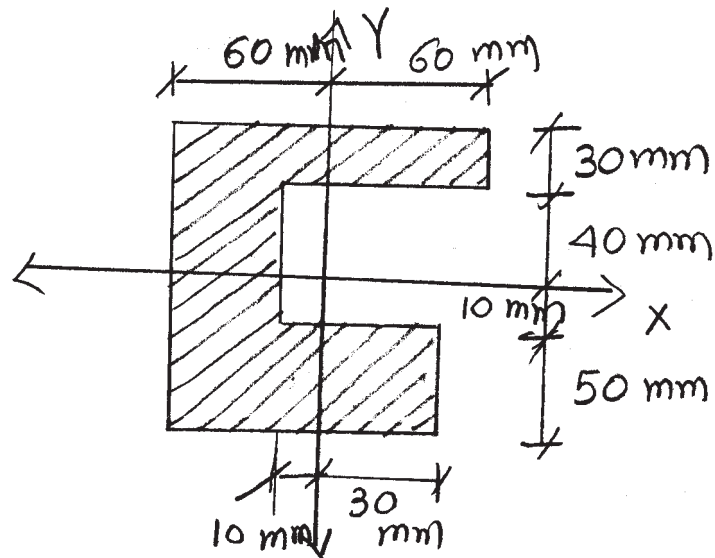
- Q-2 Locate the Centroid of the shaded area shown in fig-4. show your chosen reference axis.

06



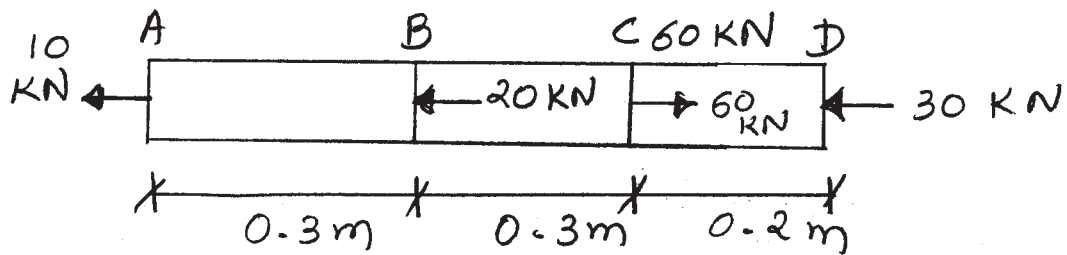
Q-3 Calculate MI about the given x-x and y-y axis , for the shaded area shown in fig-5

06



Q-4 Calculate stress , strain & overall deformation for a steel bar shown in fig-6.  $E = 2 \times 10^5 \text{ N/mm}^2$

04



$$\phi_{\text{bar}} = 20 \text{ mm}$$

Q-5 Explain & draw deformation & Bending moment diagram for a frame shown in fig -7

02

