* U G - 6 0 7 3 *

UG-6073

B. Arch. - I (Sem. - II) Examination

May\June – 2012

Structural Design & Systems - II

(New Course)

Time : **2** Hours] [Total Marks : **50**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. Arch. - I (Sem. - II)**

Name of the Subject :

☛ **Structural Design & Systems - II (New Course)**

☛Subject Code No. : **6 0 7 3** ☛Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Assume suitable data and specifically mention them.

(3) Figures to the right indicate full marks.

(4) Use of nonprogrammable sicentific calculator is permitted.

1 Calculate & Draw Shear Force & bending moment diagram **15** for the beam shown in **Fig. 1**.

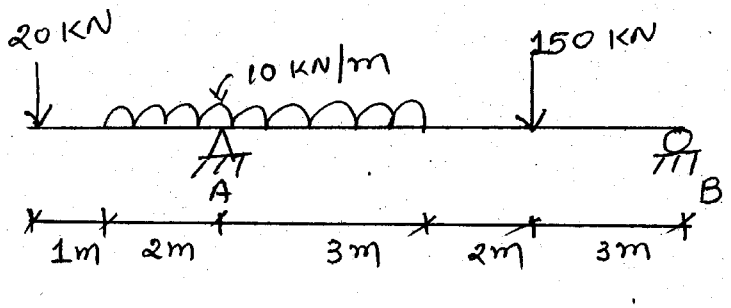

Fig. 1

OR

1 (a) Calculate & Draw Shear Force & Bending moment diagram for the Beam shown in **Fig. 2**. **6**

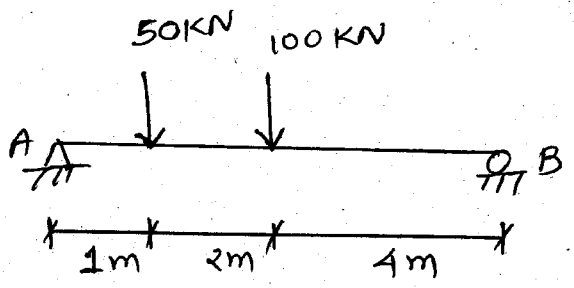

Fig. 2

(b) Calculate & Draw Shear Forece & bending moment diagram for the Beam shown in **Fig. 3**. **6**

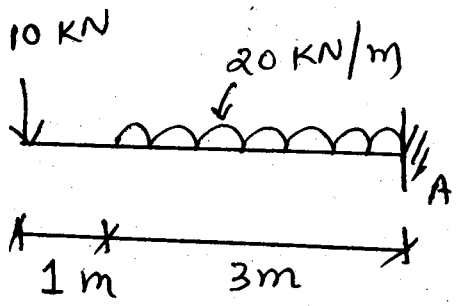

Fig. 3

2 Explain following terms : **6**

(i) Ductile material

(ii) Point of contraflexure

(iii) permissible stress.

3 Locate the cof the shaded area shown in **Fig. 4** OR **Fig. 5**, show your chosen reference axis. **10**

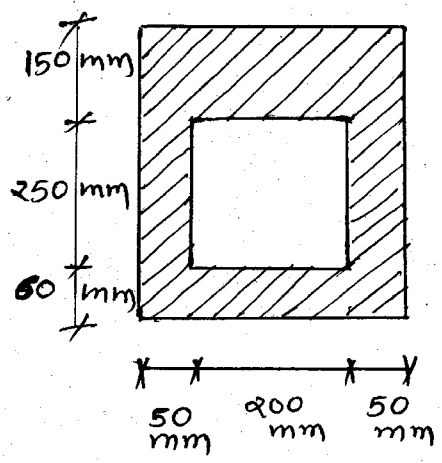

Fig. 4

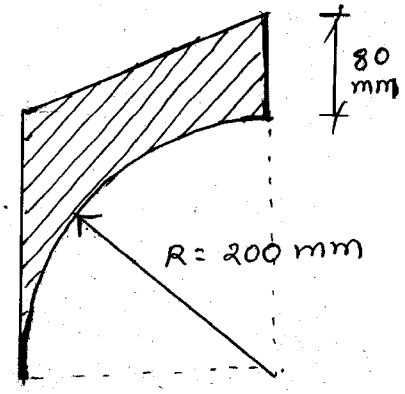

Fig. 5

4 Calculate MI about the given x-x axis, for the shaded area area shown in **Fig. 6**. **10**

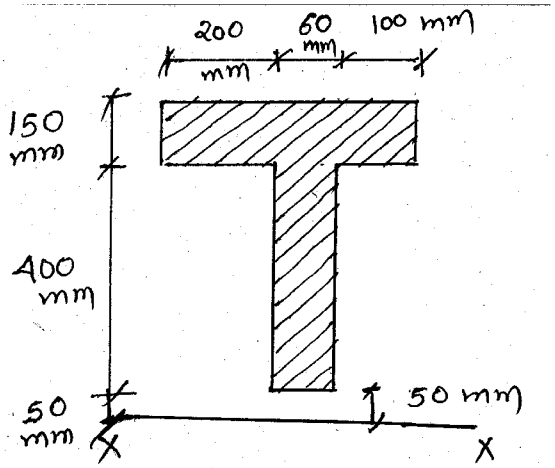

FIG-6

5 Calculate stress & strain in various parts of the rod shown in **Fig. 7**. Modulus of Elasticity is 2×10^5 N/mm^2, $\phi ab = 50mm$, $\phi bc = 60mm$, $\phi cd = 40mm$. **7**

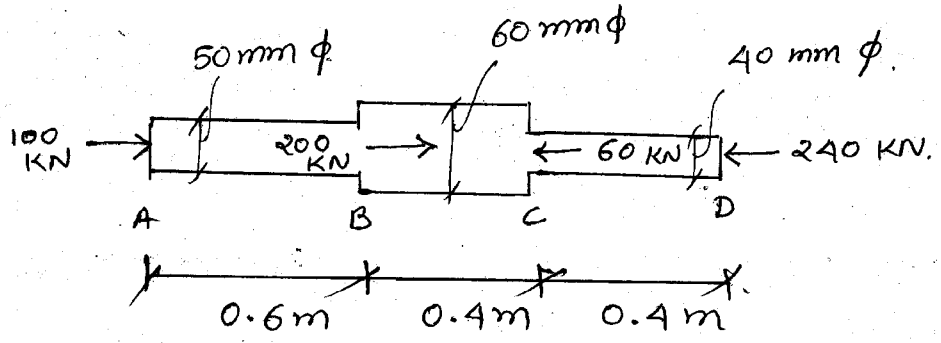

FIG-7

6 Explain & draw bending moment diagram for a Frame shown in **Fig.** 8. **5**

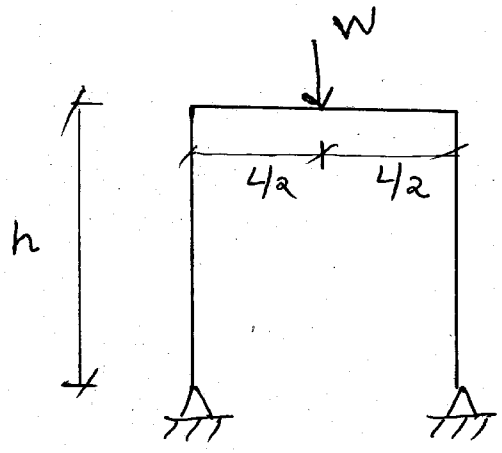

FIG- 8