



SARVAJANIK UNIVERSITY

S-2026 Date: 03-08-26 Time:09:30 AM to 11:30 AM
Interim Backlog Exam

B.Arch. -I - SEMESTER- II EXAMINATION

Course Code: BRAR 22202

Course Name: Structure - II

Total Marks: 50

Time : 2 Hours.

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of nonprogrammable scientific calculator is allowed.
5. Show sign conventions.

Q-1 For the Beam subjected to loading as shown in Fig -1 & cross section as shown in Fig- 2 , Calculate & draw bending stress diagram. 13

Q-2 A. For the Beam subjected to loading as shown in Fig -1 & cross section as shown in Fig-2 , Calculate & draw Shear stress diagram. 10

B. Answer following questions. 03

1. Axial Stress is given by equation = _____
2. Modulus of elasticity changes as per material .(True / false)
3. We use brittle material for structural members.(True / false)

Q-3 Attempt any TWO Questions out of following 24

- (i) Calculate maximum deflection for a beam given in Fig- 3.
- (ii) Calculate net stress at points A,B,C,D for the column subjected to eccentric loading of 1000 KN as shown in Fig-4.
- (iii) Calculate & draw bending moment diagram for a beam a shown in Fig - 5 , using Moment distribution Method.
- (iv) Explain following terms : Short column , medium column & long column along with its failure mode.

Calculate Load carrying capacity of a Cast Iron column having rectangular cross section of 20 mm x 40 mm. Consider $E = 1.7 \times 10^5 \text{ N/mm}^2$. Actual length of column is 8 m. Both the ends of column are hinged. Use Rankine's formula.

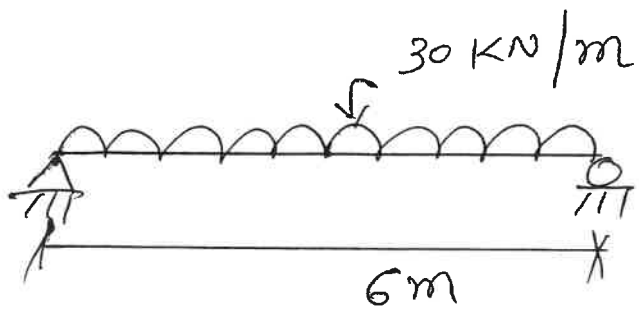


FIG-1

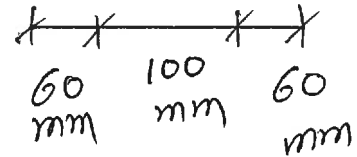
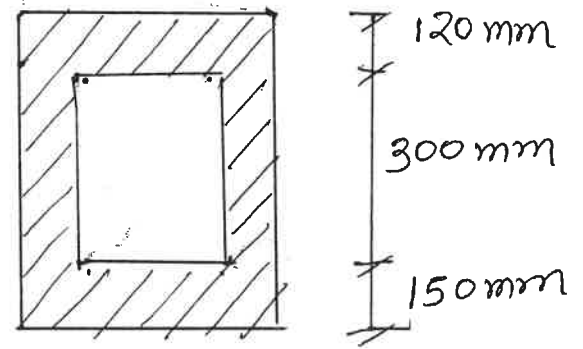


FIG-2

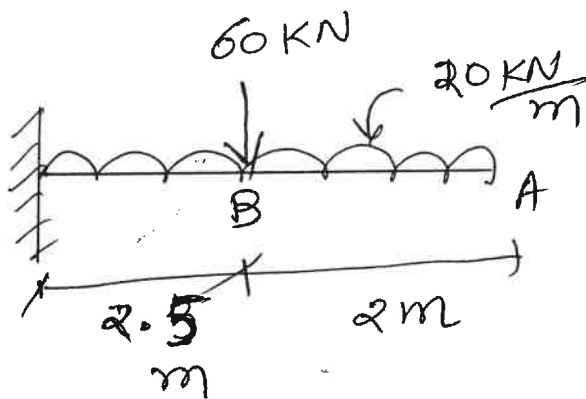


FIG-3

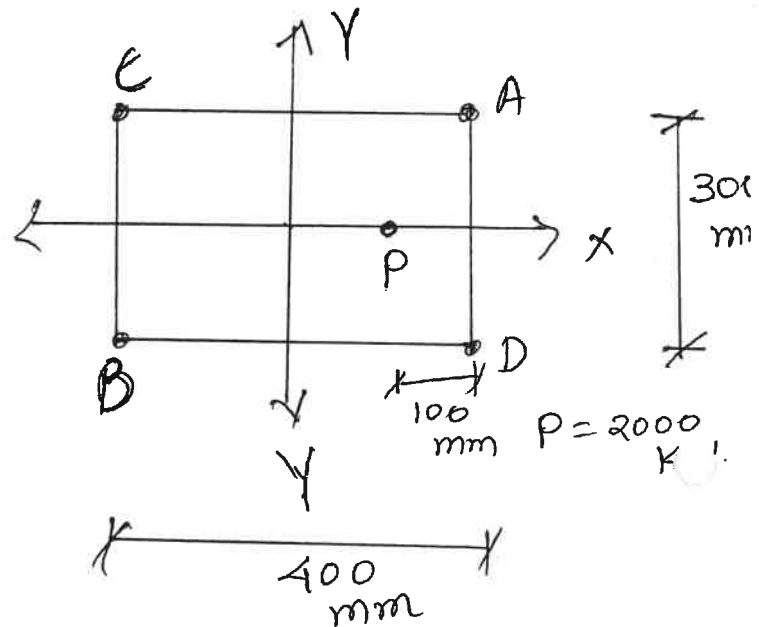


FIG-4

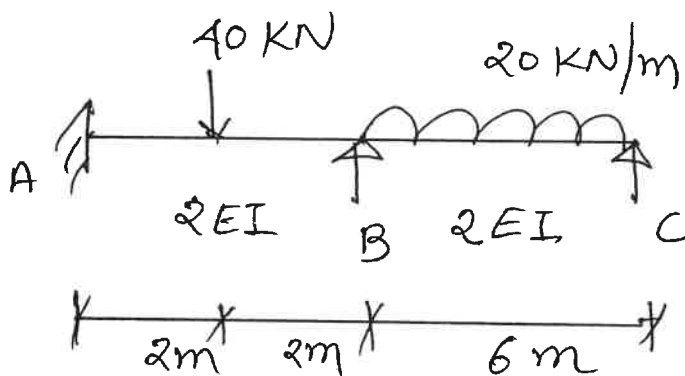


FIG-5