

Time: ~~Two hours~~/Three hours/~~Four hours~~/~~Six hours~~

(50 marks for each part)

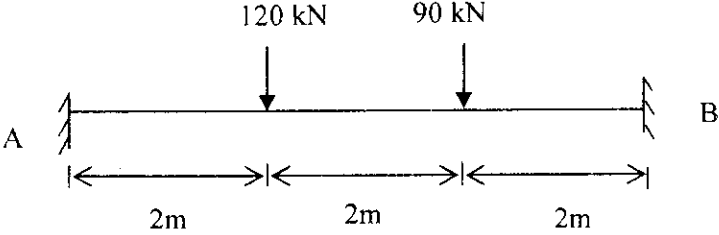
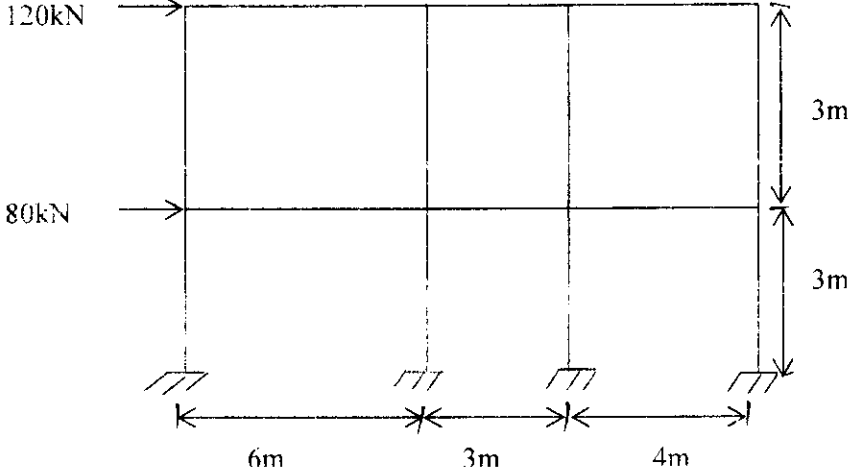
Use a separate Answer-Script for each part

No. of Question	PART – 1	
	<u>Answer any TWO</u>	
1.	<p>Analyze the portal frame (Fig. 1) by "Moment Distribution method". EI is constant for all members. Draw SFD and BMD.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div data-bbox="227 604 535 840"> <p style="text-align: center;">Fig.1</p> </div> <div data-bbox="714 560 1266 795"> <p style="text-align: center;">Fig.2</p> </div> </div>	25
2.	<p>Analyze the continuous beam in Fig. 2, (by slope deflection method) if supports B sink by 2mm. $I=4 \times 10^7 \text{ mm}^4$, $E= 200 \text{ kN/mm}^2$. Draw SFD and BMD.</p>	25
3. a)	<p>Explain the principle of analyzing fixed arch.</p>	6+8+5+6=25
b)	<p>Find the horizontal and vertical reactions of a 2-hinge parabolic arch (span L and height h) subjected to uniformly distributed load acting through the left half.</p>	
c)	<p>What do you mean by the term distribution factor?</p>	
d)	<p>What is static and kinematic indeterminacy? Find the static and kinematic indeterminacies of a fixed-fixed beam.</p>	

B. CIVIL ENGG. (EVENING) 3RD YEAR 1ST SEM.SUPPLEMENTARY EXAM. 2017**Subject: THEORY OF STRUCTURE -II TIME: 3 Hours****Full Marks: 10**

(50 marks for each p

Use a separate Answer-Script for each part
Assume necessary data if required

No. of questions	Part II (Answer question No. 1 and any 2 from the rest) Full Marks = 50	Marks (10+2x20=50)
1.	What do you know about portal and cantilever method? Describe with neat sketch.	10
2.	Analyze the fixed beam shown in figure 1. With column analogy method. EI constant. <div style="text-align: center;">  <p>Figure 1.</p> </div>	20
3.	Analyse the frame shown in figure 2. With portal method and draw the BMD of the frame. <div style="text-align: center;">  <p>Figure 2.</p> </div>	20

B. CIVIL ENGG. (EVENING) 3RD YEAR 1ST SEM.SUPPLEMENTARY EXAM. 2017

Subject: THEORY OF STRUCTURE -II TIME: 3 Hours

Full Marks: 100

(50 marks for each part)

Use a separate Answer-Script for each part
Assume necessary data if required

4.

A multistoried building consists of 3 storied and 3 bay frames spaced at 3 m center to center. Live load on floor slab is 4 kN/m^2 and dead load 3 kN/m^2 . The spans of the beams from left to right are 5m, 4m and 4 m respectively and storey height is 3 m. Moment of inertia of the beams is 1.5 times that of columns. Self-weight of the beams are 3 kN/m . Determine the maximum moment in the beam at the junction (C) of the second and third span of 2nd floor.

20

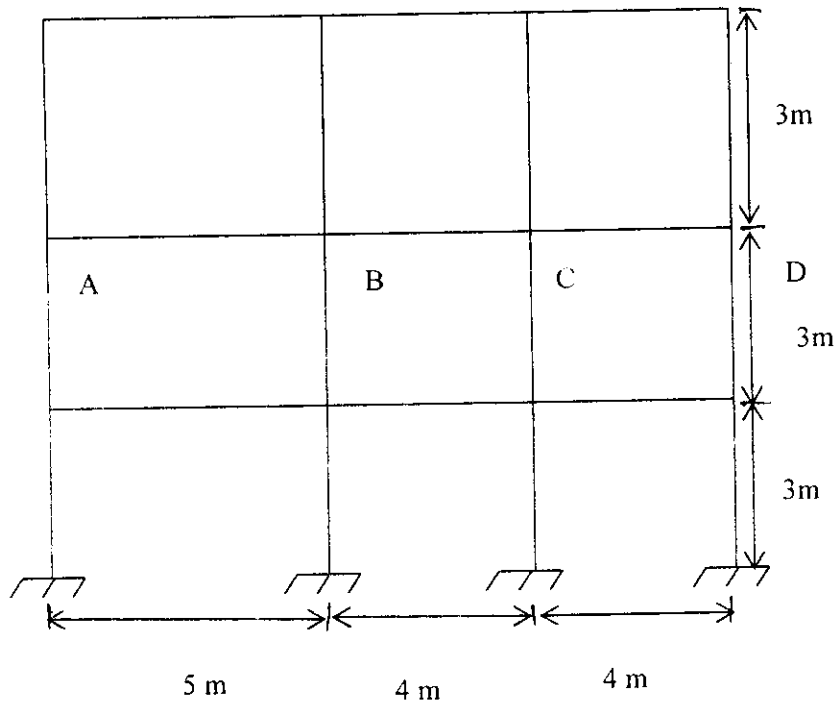


Figure 3.