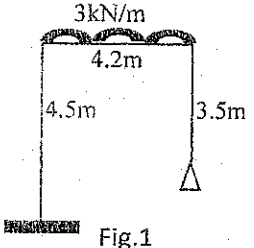
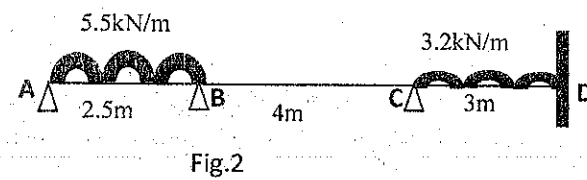


Use a separate Answer-Script for each part

No. of Question	PART – I	
	<p style="text-align: center;">Answer any TWO</p> <p>1. 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: flex-start;"> <div style="text-align: center;">  <p>Fig.1</p> </div> <div style="text-align: center;">  <p>Fig.2</p> </div> </div> <p>2. Analyze the continuous beam in Fig. 2, (by slope deflection method) if supports B and C sink by 3mm and 2mm respectively. $I=4.0 \times 10^7 \text{ mm}^4$, $E= 200\text{KN/mm}^2$. Draw SFD and BMD.</p> <p>3. a) Explain the principle of analyzing Fixed arch.</p> <p>b) What do you mean by the term What do you mean by the term carry over moment? Explain with example.</p> <p>c) What is static and kinematic indeterminacy? Find the indeterminacies for the structure in Fig.1 and Fig 2.</p>	<p>25</p> <p>25</p> <p>8+8+(5+2+2)=25</p>

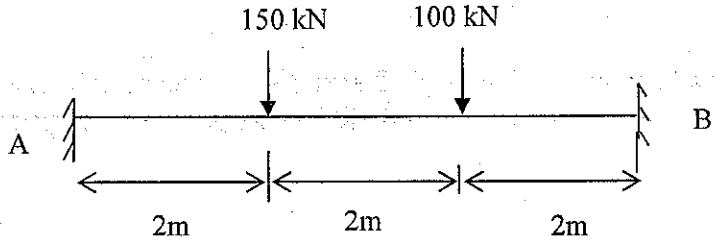
BACHELOR OF ENGG. (CIVIL ENGG) 3RD YEAR 1ST SEM. EXAM. 2019

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

No. of questions	Part II (Answer any two questions) Full Marks = 50	Marks (25x2=50)
1.	<p>Analyze the fixed beam shown in figure 1. with column analogy method and determine the fixed end moments. EI constant.</p>  <p style="text-align: center;">figure 1</p>	25
2.	<p>a) Write down the assumptions of portal and cantilever method.</p> <p>b) Analyze the frame shown in figure 2. by cantilever method and draw the bending moment diagram of the frame.</p>	5+20=25

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(50 marks for each part)

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Assume necessary data if required

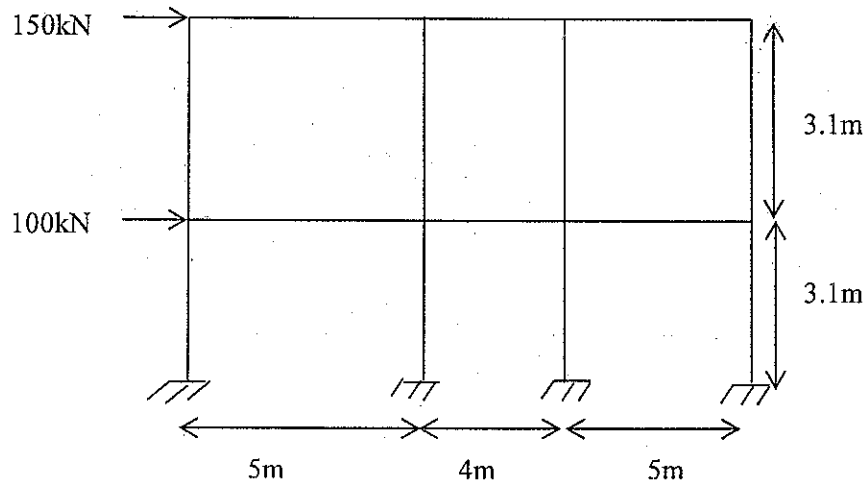


Figure 2.

3.

A multistoried building consists of 3 storied and 3 bay frames spaced at 3 m center to center. Live load on floor slab is 3.5 kN/m^2 and dead load 3 kN/m^2 . The spans of the beams from left to right are 4.5 m, 4m and 4.5 m respectively and storey height is 3.1 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.

25

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(50 marks for each part)

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Assume necessary data if required

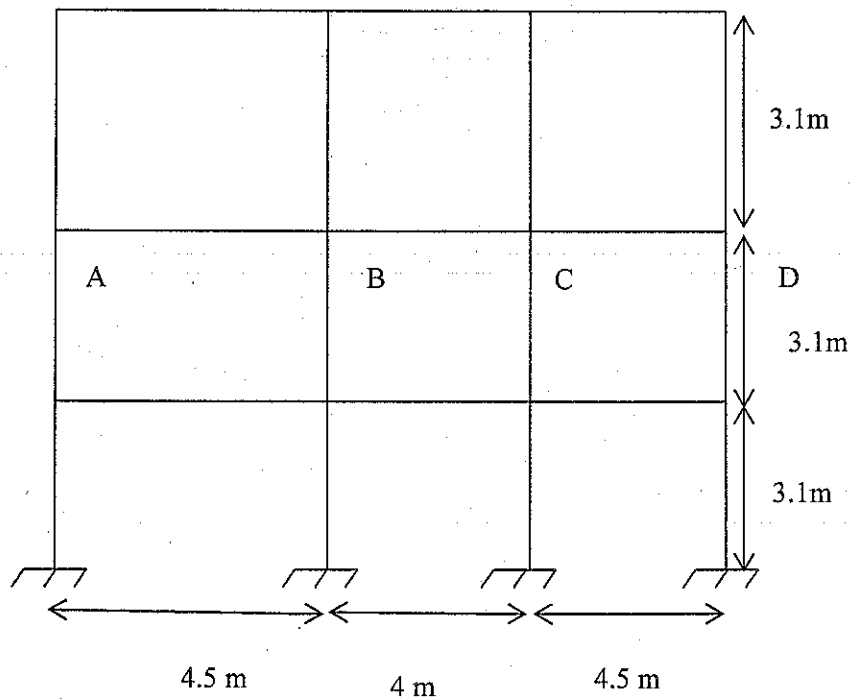


Figure 3.