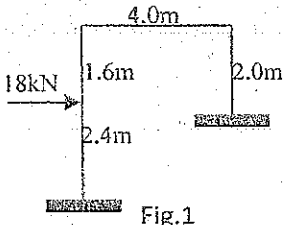
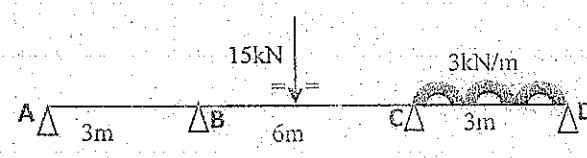
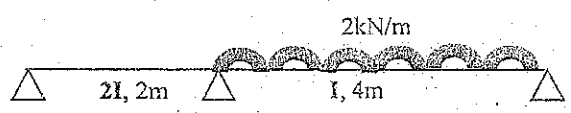


Use a separate Answer-Script for each part

No. of Question	PART – I	
1.	<p><u>Answer any TWO</u></p> <p>Analyze the portal frame (Fig. 1) by "Moment Distribution method". EI is constant for all members. Draw SFD and BMD.</p>  <p>Fig.1</p>  <p>Fig.2</p>	25
2.	<p>Analyze the continuous beam in Fig. 2, (by slope deflection method) if supports B and C sink by 2mm and 2.5mm respectively. $I=4 \times 10^7 \text{ mm}^4$, $E= 200 \text{ KN/mm}^2$. Draw SFD and BMD.</p>	25
3. a)	<p>Explain the principle of analyzing fixed arch.</p>	
b)	<p>What do you mean by the term relative stiffness of the member?</p>	
c)	<p>What is static and kinematic indeterminacy? Explain with examples.</p>	8+5+4+8=25
d)	<p>Find maximum positive and negative moment of the beam in Fig. 3.</p>  <p>Fig.3</p>	

Ex /CE/5/T/303/2018(S)

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

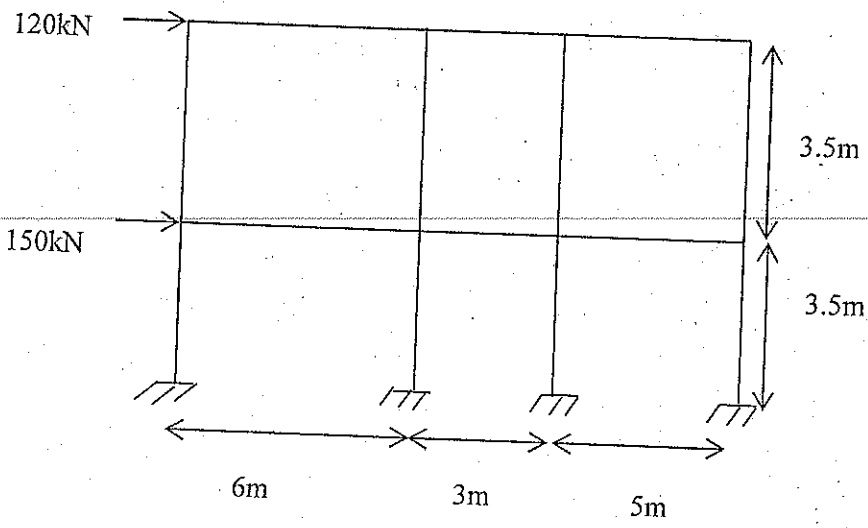
SUPPLEMENTARY EXAM. 2018

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 2 questions) Full Marks = 50	Marks (2x25=50)
1.	<p>Analyse the frame shown in figure 1. with cantilever method and draw the BMD of the frame.</p>  <p style="text-align: center;">Fig 1.</p>	25

Ex /CE/5/T/303/2018(S)

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

SUPPLEMENTARY EXAM. 2018

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

2.

A multistoried building consists of 3 storied and 3 bay frames spaced at 3.2 m center to center. Live load on floor slab is 3 kN/m^2 and dead load 3.5 kN/m^2 . The spans of the beams from left to right are 5m, 4m and 4 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 (B) of the first and second span of 2nd floor.

25

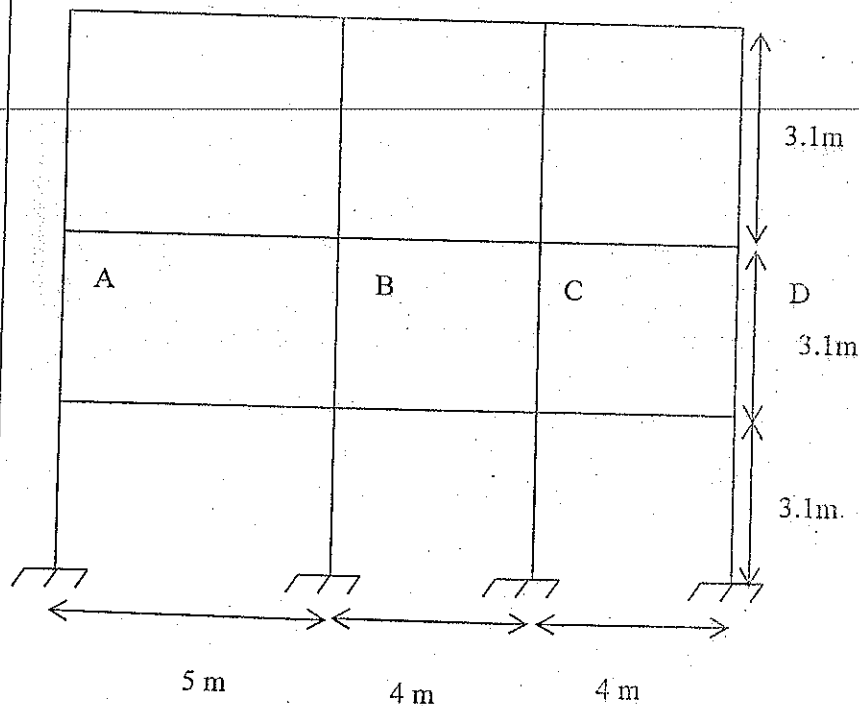


Fig 2.

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

SUPPLEMENTARY EXAM. 2018

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

3.	<p>A fixed beam of span L carries a point load P at mid span. The moments of inertia of the section are I for the left half of the span and $2I$ for the right half of the span. Find the fixed end moments by column analogy.</p> <div style="text-align: center;"><p>The diagram shows a horizontal beam of total length L. A downward point load P is applied at the midpoint. The left half of the beam has a length of $L/2$ and a moment of inertia of I. The right half has a length of $L/2$ and a moment of inertia of $2I$. The beam is fixed at both ends, indicated by vertical lines with hatching on the left and right.</p></div>	25
	Fig 3.	