Code No: R22016 **R10** SET - 1

II B. Tech II Semester Supplementary Examinations, November - 2018
STRUCTURAL ANALYSIS – I
(Civil Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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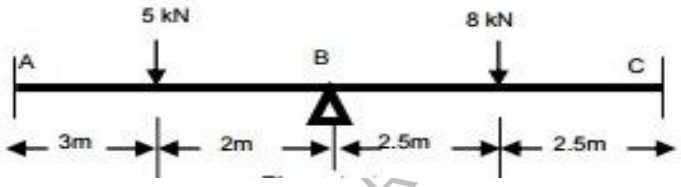
1.	a)	How is the propped reaction determined? Explain	8M
	b)	A propped cantilever beam of 6m is subjected to uniformly distributed load 50kN/m throughout the span. Draw SFD and BMD.	7M
2		A fixed beam AB of length 6m carries point loads of 180kN and 140kN at a distance of 2m and 4m from left end A. Find the fixed end moments and reactions at the supports. Draw SFD and BMD.	15M
3.		Derive the Claperyon's theorem of Three Moments	15M
4.		A beam ABC, 10m long, hinged at ends A and B is continuous over joint B and is loaded as shown in Fig. Using the slope deflection method, compute the end moments and plot the bending moment diagram. Also, sketch the deflected shape of the beam. The beam has constant EI for both the spans.	15M



5.		Derive an expression for strain energy due to axial load ,bending moment and shear force	15M
6.		Two point loads of 160 kN and 220kN spaced 5m apart, cross a girder of 30metres span from left to right with 160kN leading. Construct the maximum shear force and maximum bending moment diagrams stating the absolute maximum values.	15M
7.	a)	Define Influence lines	2M
	b)	Draw the Influence lines for a forces in in members of Pratt Truss	13M
8.		Derive the Castigliano's first theorem	15M
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