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

II B. Tech II Semester Supplementary Examinations, April-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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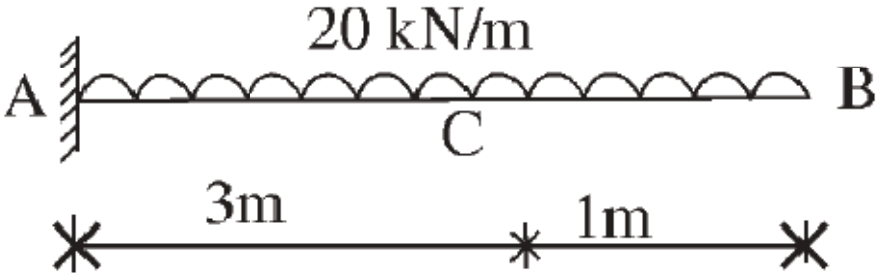
1 A Propped cantilever beam is subject to a concentrated load W at the center. Determine the collapse load for the beam (15M)

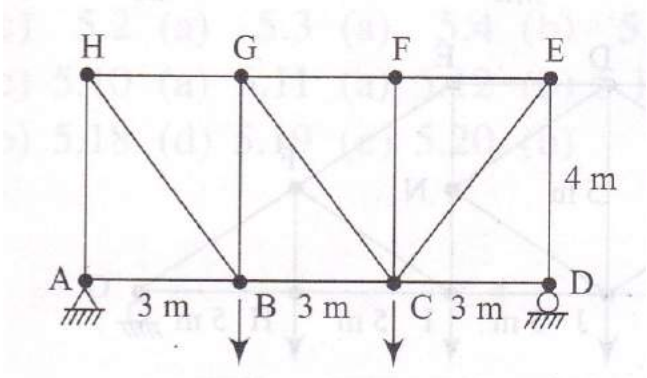
2. A fixed beam AB of span 9m carries uniformly distributed load of 70 kN/m over span of 3m from A. Find fixed end moments from first principle. Draw SFD and BMD (15M)

3. A continuous beam ABC is fixed at A and C and simply supported at C, if AB = 4 met,BC = 6 m, the span AB carries a point load of 10 kN at one m from A and span BC carries U.D.L of 4 KN/m, find reactions and support moments using theorem of three moments and draw SFD and BMD. (15M)

4. Find slope and deflection at 'C' for cantilever beam of uniform section as shown in figure using moment area method. E = 2×10^5 MPa and I = 5×10^8 mm^4. (15M)



5. (15M)



Analyze the truss with any suitable method
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6. A train of 5 wheel loads crosses a simply supported beam of span 22.5 m. Using influence lines, calculate the maximum positive and negative shear forces at mid span and absolute maximum bending moment anywhere in the span (15M)

7 Determine maximum shear and moment by influence line method for a simply supported beam 4m loded with uniformly distributed load of 10 kN/m on whole span (15M)

8. a) Determine the static and kinematic indeterminacy of a propped cantilever and fixed beams. (7+8M)

b) Differentiate Static and Kinematic Indeterminacy