B.E.(with Credits)-Regular-Semester 2012 - Civil Engineering Sem VI

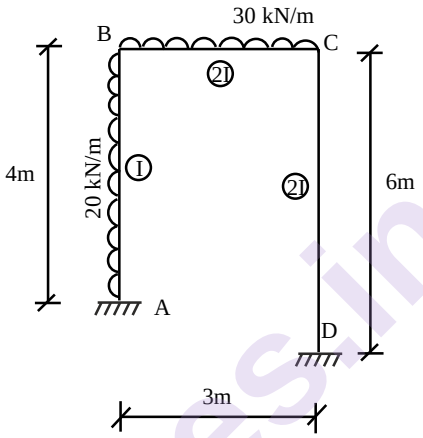
CE602 - Structural Analysis-II

P. Pages : 3 **GUG/W/16/5335**

Time : Four Hours * 3 5 2 4 * Max. Marks : 80

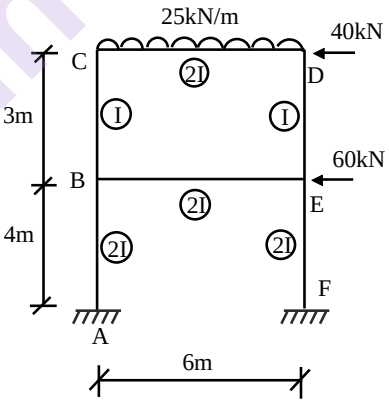
Notes : 1. All questions are compulsory.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.

1. Analyze the frame shown in the fig by Kani's method and draw BMD. Clearly explain the calculations. **16**

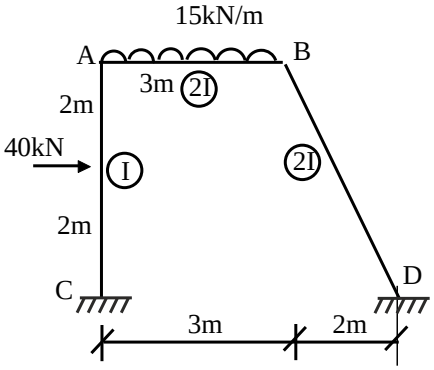


OR

2. Analyze the frame shown in the fig. below by Kani's method & Draw BMD. Clearly explain calculations. **16**

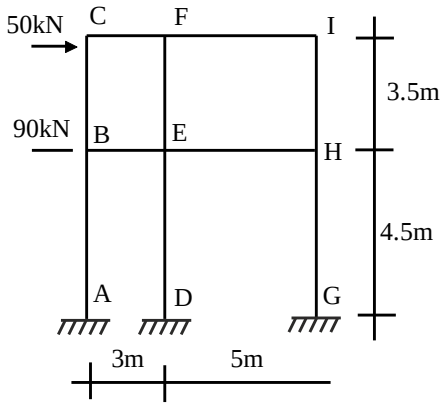


3. Analyze the frame shown in the fig. below by moment distribution method & show BMD. **16**



OR

4. Analyze the frame by portal method and draw BMD. **16**

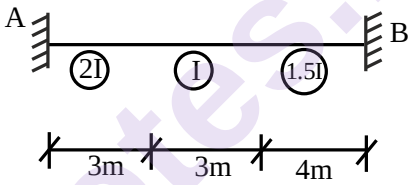


5. a) Using column Analogy method calculate.

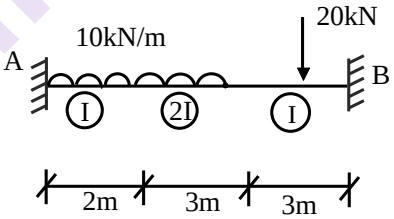
i) Rotational stiffness at 'A'. **3**

ii) Carry-over factor from A to B. **2**

iii) Moment at 'B' for unit displacement at 'A' **3**



b) Analyze the beam shown below by column Analogy M. **8**



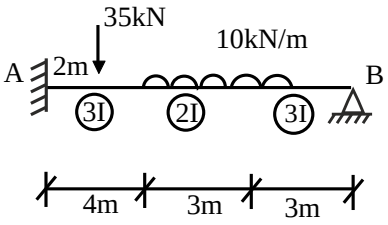
OR

6. a) For the beam shown below calculate.

i) Rotational stiffness at A. **3**

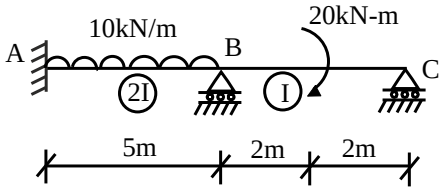
ii) Carryover factor from A to B. **2**

iii) Moment at 'A' for unit displacement at 'B' **3**



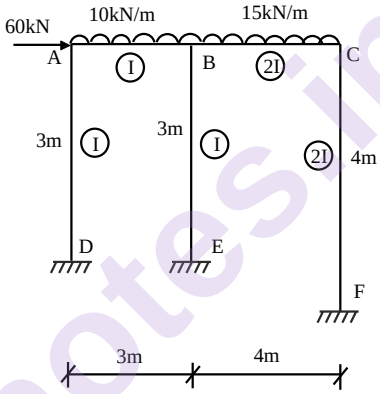
b) Analyze the beam shown above in Q.6 (a) by column analogy method and draw BMD. **8**

7. Analyze the beam shown below by flexibility method and draw BMD. **16**



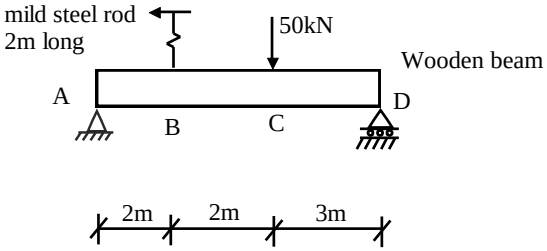
OR

8. Analyze the frame below by moment distribution method & draw BMD. **16**



9. Analyze the truss shown below by strain energy method and forces in all the members. **16**

- Wooden beam 200 mmx350 mm deep.
- Mild steel rod 32 mm dia.
- Modulus of elasticity of wood is 10 kN/mm^2.
- Modulus of elasticity for mild steel 200 kN/mm^2



OR

10. Write notes on **any three.** **16**

i) Plain stress & plain strain problems.
ii) Generalized Hooke's law.
iii) Equilibrium and compatibility conditions
iv) Circular polariscopic.

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