

IV B.Tech I Semester Supplementary Examinations, April/May 2005  
**ADVANCED STRUCTURAL ANALYSIS**  
 (Civil Engineering)

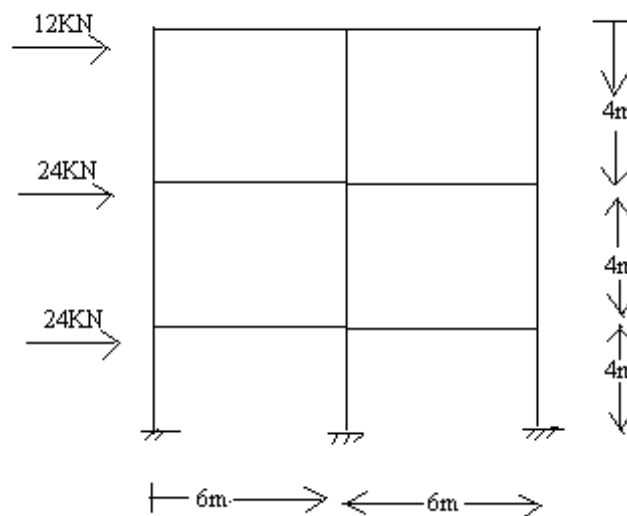
Time: 3 hours

Max Marks: 80

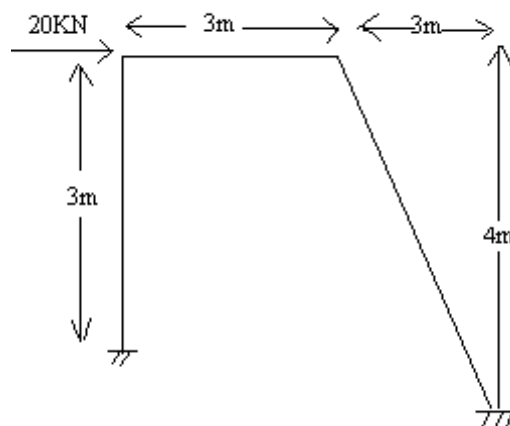
Answer any FIVE Questions  
 All Questions carry equal marks

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1. Analyse the following frame by Portal method.

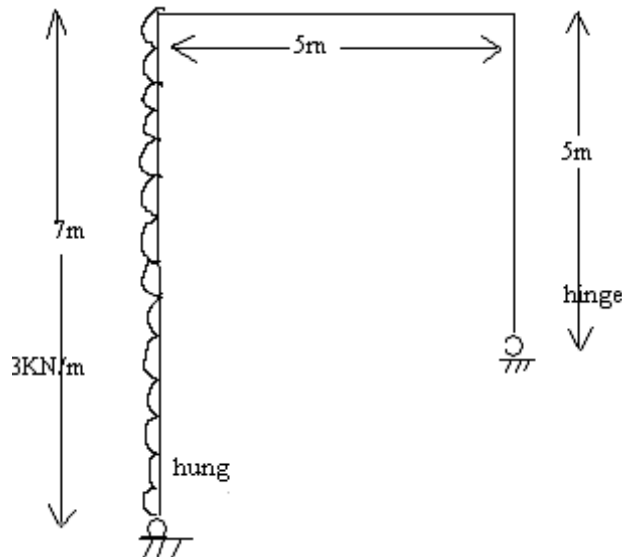


2. Analyse the frame shown by moment distribution method.

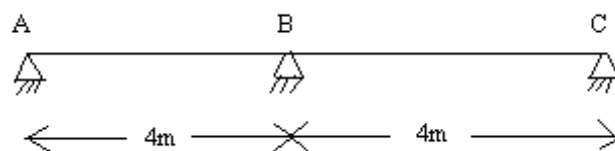


3. Estimate the modules of subgrade reactions for the following design parameters on elastic foundations?  
 $B=1.22\text{M}$ ;  $L=1.83\text{m}$   $D=0.610\text{M}$   
 $q_a=200\text{kpa}$  (clayey sand approximate by 10m deep)  
 $E_s=11.72\text{Mpa}$  (average depth  $5B$  below base)

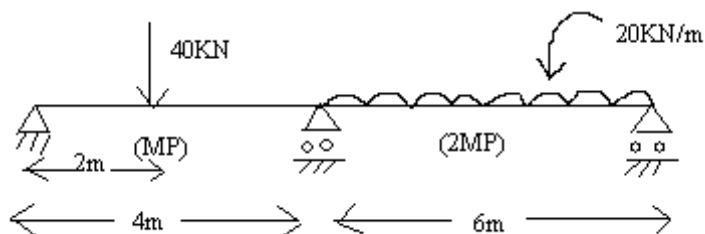
4. Analyse the following frame using stiffness method.  $EI$  is constant.



5. Draw the influence line diagram by plotting the ordinates at one metre interval for moment, at mid span of BC for the beam shown below. Assume constant moment of inertia throughout.



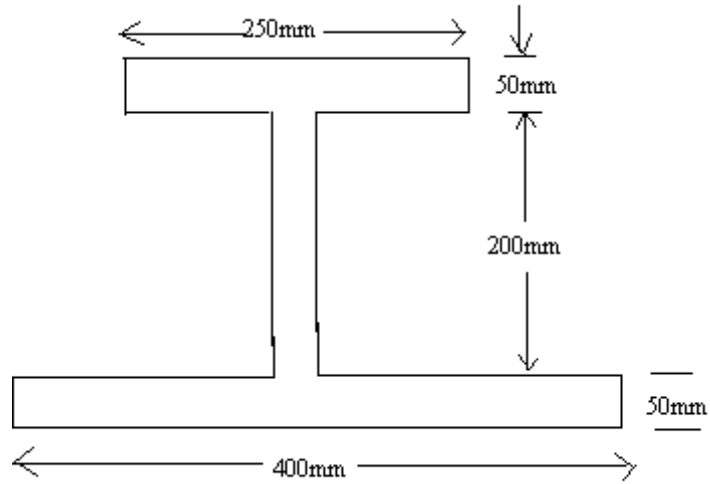
6. Calculate the plastic moment capacity of the following beam shown below. Take load factor as 1.5.



7. Explain the following:

- Approximate methods in the analysis of simple multistoried frames
- Assembly of global stiffness matrix.
- Muller-Breslau principle.

8. Determine the shape factor for the unequal I section in the figure.



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