

淡江大學 103 學年度碩士班招生考試試題

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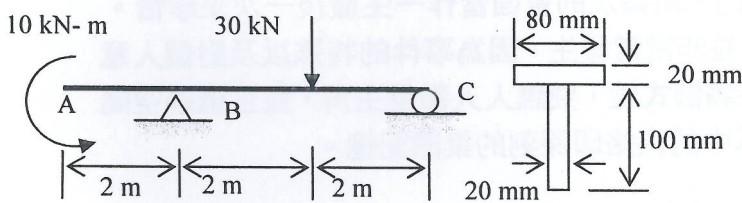
系別：土木工程學系

科目：結構學 (含工程力學)

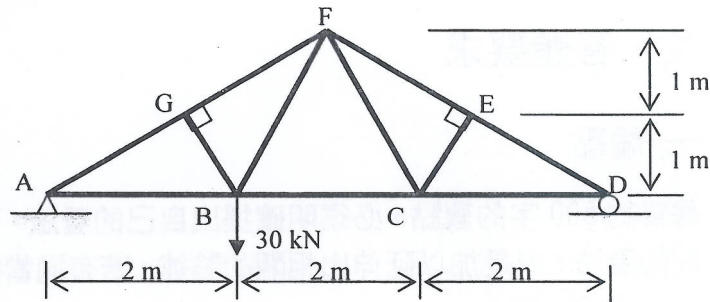
考試日期：3月2日(星期日) 第2節

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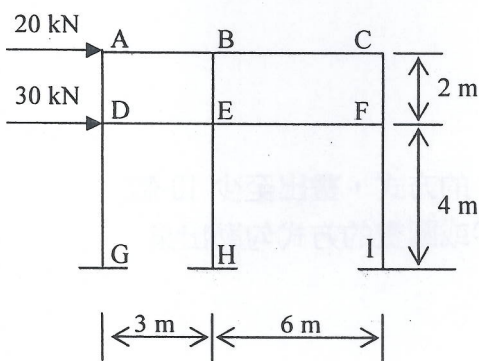
1. A beam of T-section is supported and loaded as shown in figure 1. Determine the maximum tensile and compressive stresses in the beam. (25%)
2. Use approximate method (portal method or cantilever method) to (a) state the assumptions you made, (b) compute reactions at fixed end supports, (c) draw the moment diagrams, of the frame shown in figure 2, assuming all columns have same cross-section. (25%)
3. Using virtual work method, determine the vertical displacement at joint C of the truss shown in figure 3. $E=200 \text{ GPa}$, $A=1000 \text{ mm}^2$. (25%)
4. Use Slope-Deflection method, determine the reactions at fixed end supports A and D, and draw moment diagram of the frame shown in figure 4. EI is constant. (25%)



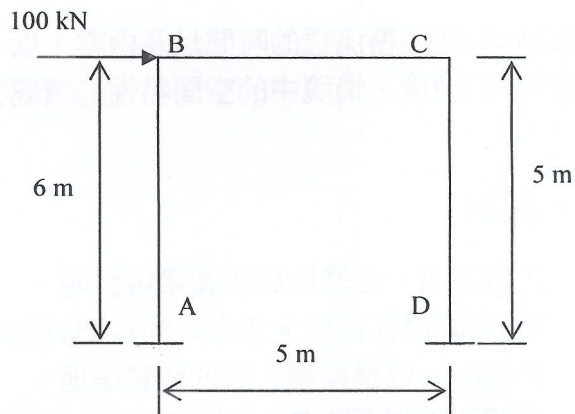
(Figure 1)



(Figure 3)



(Figure 2)



(Figure 4)