

系別：土木工程學系 A 組

科目：結構學(含工程力學)

考試日期：3 月 4 日(星期六) 第 1 節

本試題共 4 大題， 2 頁

本試題雙面印刷

1. A plane truss is subjected to the loads as shown in Fig.1. Find the member forces of a, b, c and d. (20%)

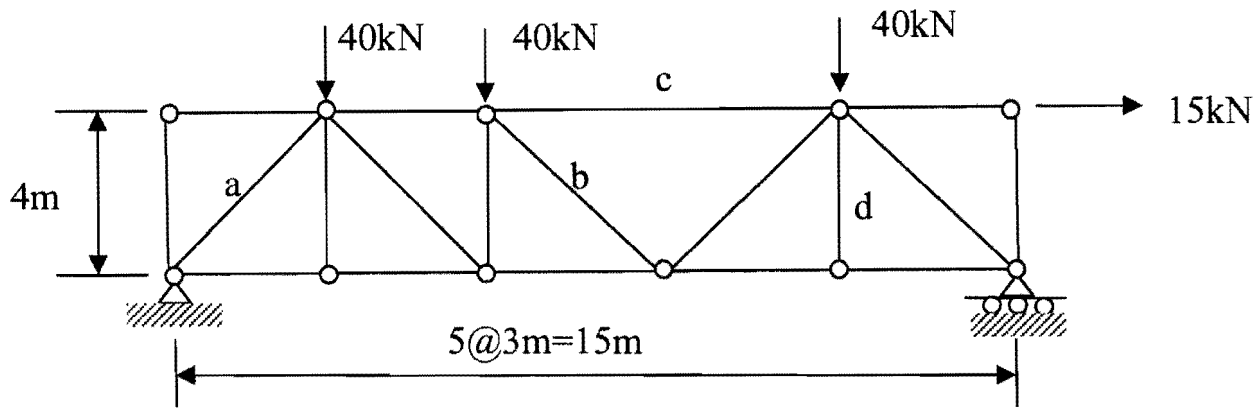


Fig. 1

2. A beam with a T cross-section is subjected to the loads as shown in Fig. 2.

- (a) Find the maximum tensile and compressive stresses due to the bending moments. (20%)
- (b) Find the maximum shear stress. (10%)

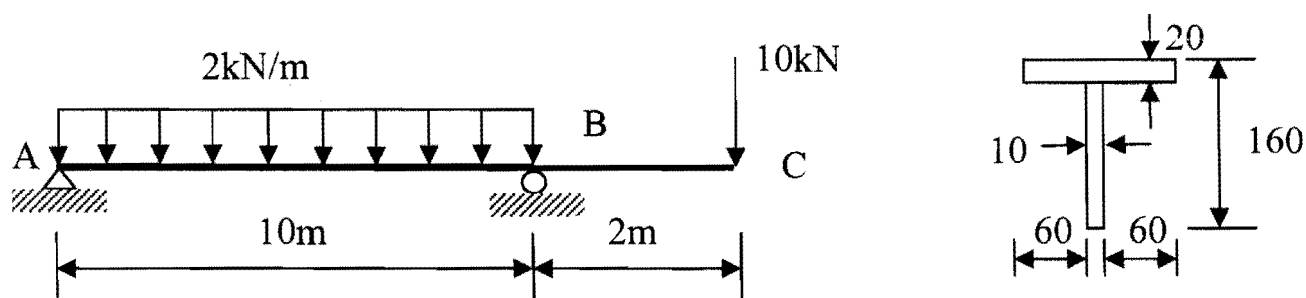


Fig. 2

unit: mm

3. (1) Find the influence lines for (a) the moment at E, (b) the reaction at B, and (c) the shear just at the right side of support B in the beam shown in Fig. 3. (15%)

(2) If the live load is a uniformly distributed load of 10kN/m, find the maximum positive and negative moments at E. (10%)

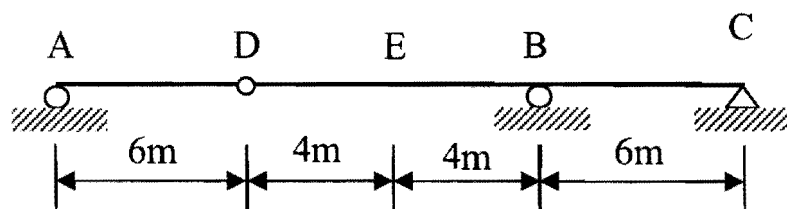


Fig. 3

# 淡江大學 106 學年度碩士班招生考試試題

10-2

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4. A plane frame ABC is fixed at A and supported by a cable BD as shown in Fig. 4. Neglecting the axial deformations of member AB and BC, find the force of cable BD and the reactions at A. ( $A=0.0005\text{m}^2$ ,  $I=0.002\text{m}^4$ ) (25%)

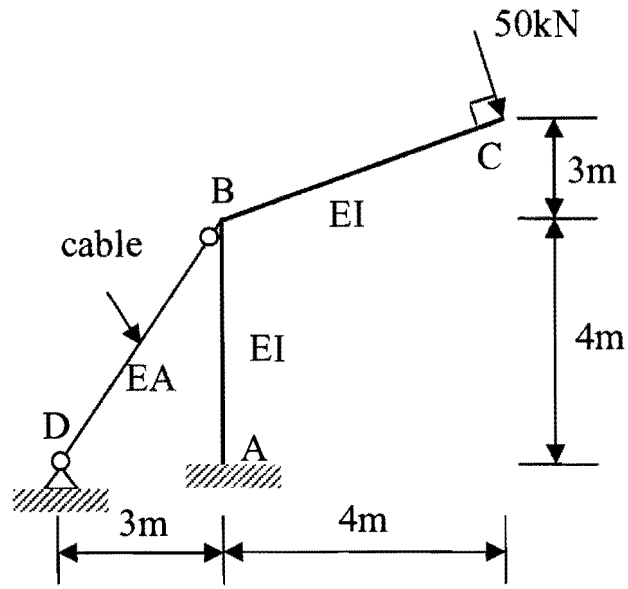


Fig. 4