淡江大學 95 學年度轉學生招生考試試題

40-1

系別：土木工程學系三年級　　科目：工程力學(含靜力學、材料力學)

准帶項目請打「V」	
V	簡單型計算機

本試題共 1 頁

[1]. A simple support beam is subjected to a trapezoidally distributed load (see Fig.-1). Draw the shear-force and bending-moment diagrams for the beam. 25 %

[2]. An element in plane stress is subjected to stress as shown (see Fig.-2). Determine the value of the angle θ_p of principal stress and the principal stress σ_1 and σ_2 . 25 %

[3]. An elastoplastic material with the sectional data shown in Fig.-3, determine the size of the elastic core "e". Given: My<=M<=Mp . 25 %

[4]. A beam ABC supports a uniform load as shown in Fig.-4. The beam is a channel section with dimension as shown in the figure. The moment inertia about the Z axis (the neutral axis) equal 5.14 in.^{4}
Calculate the maximum tensile stress σ_t and maximum compressive stress σ_c due to the load. 25 %

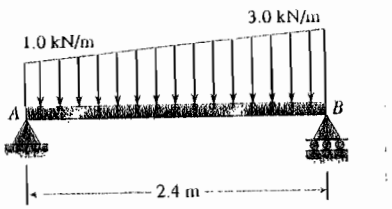

Fig.-1

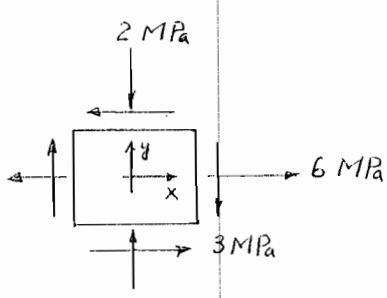

Fig.-2

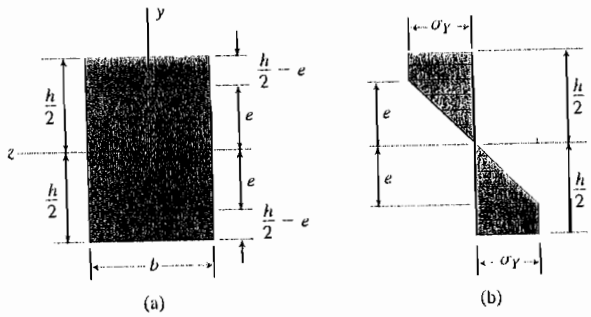

Fig.-3

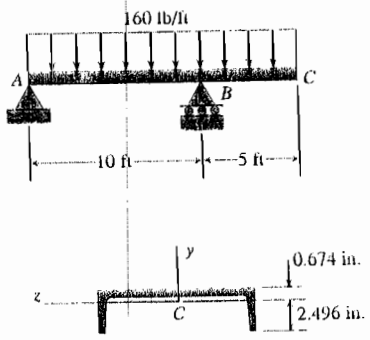

Fig.-4