

科目：材料力學

適用：土木系(結構與應力組)

考生注意：

1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
3. 限用藍、黑色筆作答；試題須隨卷繳回。

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- (1) Determine the deflection curve (15%), the angle of rotation θ_B (5%), and the deflection δ_B (5%) at the free end of a cantilever beam AB having a uniform load of intensity q acting over the middle third of its length (see Figure 1).

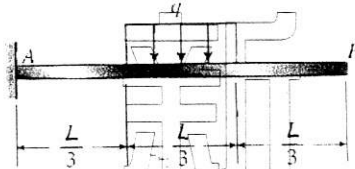


Figure 1

- (2) A propped cantilever beam is loaded by a triangular distributed load from A to C (see Figure 2). The load has a peak intensity q_0 . The length of the beam is L . Find the support reactions at A (10%), and the deflection curve of the beam (15%).

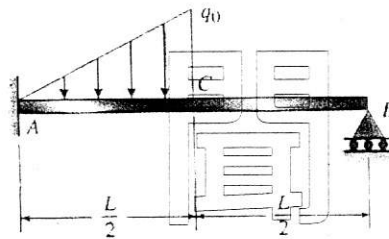


Figure 2

- (3) Draw the shear force diagram (12%) and bending moment diagram (13%) for this beam (see Figure 3).

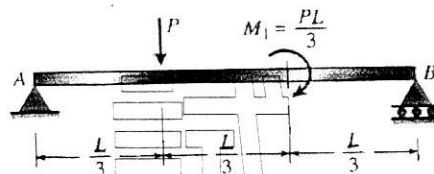


Figure 3

- (4) Find the centroid \bar{x} (10%) and the moment of inertia I_y (15%) for the shape of triangle as shown in the Figure 4. (背公式不計分)

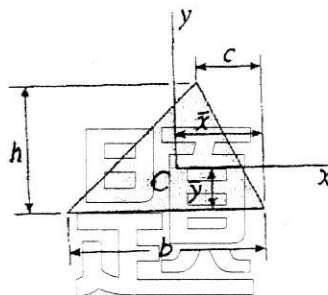


Figure 4