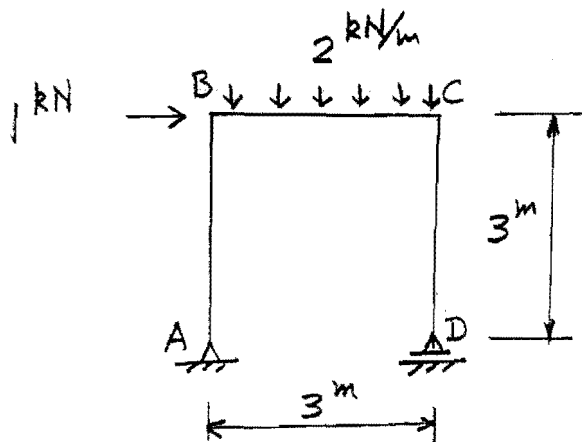
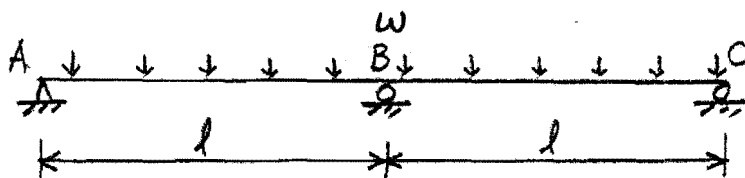


系所組別： 土木工程學系在職專班

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1. 有一鋼筋混凝土結構之校舍新建工程，依一般公共工程施工品管之作業要求，試簡述混凝土澆置作業前與作業中應具備之查驗要項及文件(請列舉五項最重要之工作並略加說明)。 (15%)
2. 有一使用全套管基樁之橋梁工程，依一般公共工程施工品管之作業要求，請列舉五項最重要之查驗工作並略加說明。 (15%)
3. 有一 700m 長之河川橋新建工程，採用預力 I 型簡支梁設計，每跨 35m，依一般工程慣例，在預力梁的施工計畫中，請列舉五項最重要之工作並略加說明。 (15%)
4. 簡答題 (25%)
 - (4-1) 試繪製圖示連續梁的彎矩圖與剪力圖。(10%)
 - (4-2) 試求圖示剛架在 D 點之反力。(5%)
 - (4-3) 試繪製鋼筋在拉力試驗之應力應變關係圖，並略加說明相關力學意義。(5%)
 - (4-4) 試繪製混凝土圓柱試體在抗壓試驗之應力應變關係圖，並略加說明相關力學意義。(5%)



(背面仍有題目,請繼續作答)

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5. 試就以下兩段英文分別說明其意義(請不用逐句翻譯) (15% × 2 = 30%)

(5-1) The cantilever sheet piling, loaded with active earth pressure which is too large, can be anchored by tie rods at, or near, its top to anchor plates, anchor walls, anchor piles or deadmen. Such anchors should be constructed far enough behind the surface of rupture of the sliding soil wedge (see Fig. 6-3c) so that it acts independently of the bulkhead and the soil behind it. By this method of construction, the driving depth, or the total length of the sheet piling and its weight, are reduced considerably.

The stability of this kind of sheet piling depends more upon the anchor than on the inducement of large resultant earth pressures. Thus this method of design permits (1) a smaller driving depth than that computed in the analysis of free cantilever sheet piling, and (2) greater retaining heights for a given section modulus of sheet piling.

(5-2) As mentioned in Sec. 6-1, when designing any specific part of a structure, we should know where to place the live load in order to produce the maximum live stresses for the part considered. Under a single concentrated load or a uniform load the critical position causing certain maximum live stress can be spotted at once by inspection at the influence line. For more complicated conditions of loading, which are of various magnitude and spacing, such as a series of moving wheels on a locomotive, we cannot tell the critical position by just looking at the influence line. The method that should be followed for such cases is essentially one of trial aided by the use of criteria based on the influence line, in order to minimize computations.

For a different type of influence line, there will be a corresponding different criterion for maxima. In this chapter we shall discuss the criteria for maxima derived from the more common types of influence diagrams.