

中央警察大學 104 學年度碩士班入學考試試題

所 別：資訊管理研究所

科 目：計算機概論

作答注意事項：

1. 本試題共 4 題，每題各 25 分；共 1 頁。
2. 不用抄題，可不按題目次序作答，但應書寫題號。
3. 禁用鉛筆作答，違者不予計分。

一、Give the definition for a good algorithm in details. Explain the time complexity in the design of an algorithm in the cases of Kruskal method and Prim method, respectively.

二、Consider the concept of Chinese remainder theorem (CRT for short). Give the numeric example to illustrate CRT. Explain the CRT as its applications in computer science with the view of information/network security.

三、Please define or explain each of the following terms. (Please give the full name for each acronym)

(一) TCP/IP

(二) HTML

(三) XML

(四) MIMD

(五) RISC

四、The Fibonacci sequence is typically defined by the following equations:

$$F_0 = 0, F_1 = 1, F_n = F_{n-1} + F_{n-2}, n \geq 2$$

(一) Please find a general expression for $F_n, n \geq 2$. (10 分)

(二) Please write a recursive algorithm to generate the sequence. (10 分)

(三) Please determine the Big Oh of this algorithm. (5 分)