

國立臺北科技大學 102 學年度碩士班招生考試

系所組別：3160 土木與防災研究所己組

第一節 計算機概論 試題

第一頁 共一頁

注意事項：

1. 本試題共三題，配分共 100 分。
2. 請標明大題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。
4. 請以整齊字體書寫程式碼，並給予適當縮排。只需寫程式碼。不寫執行結果。

程式撰寫 (共 3 題，共 100 分)

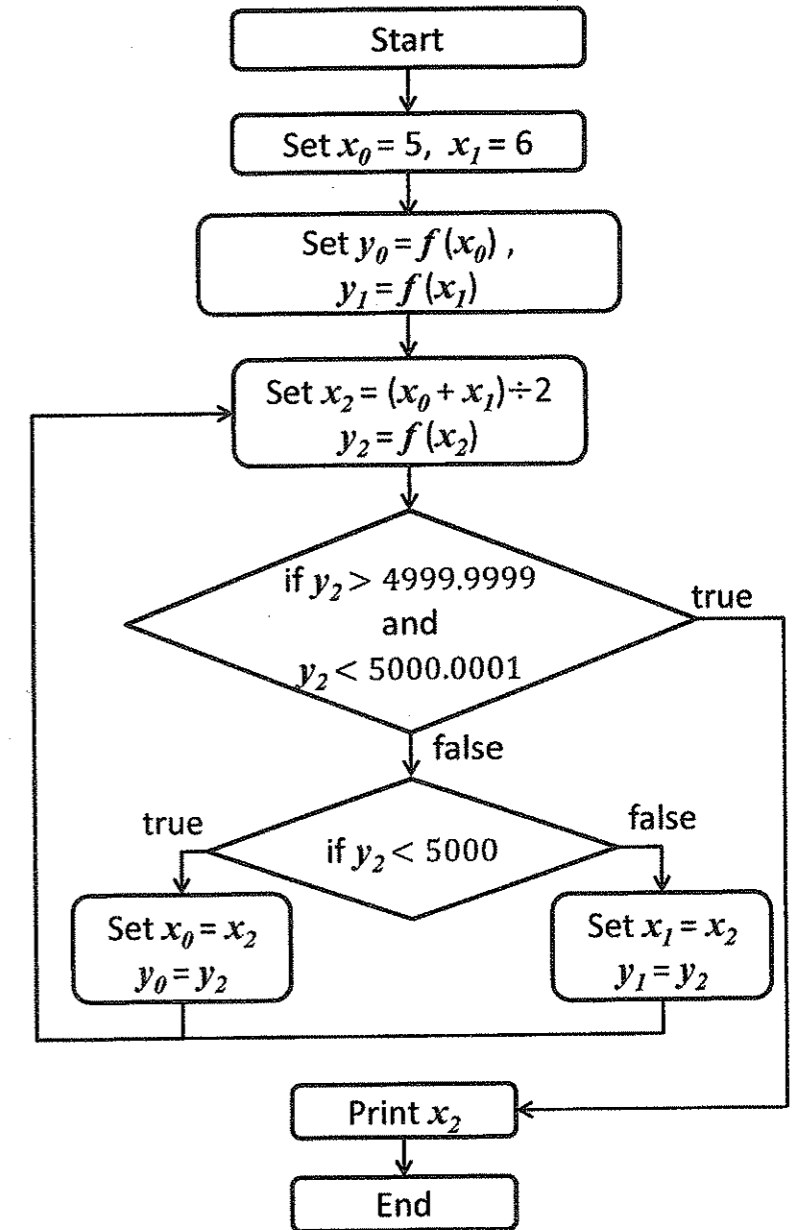
Write a program for each of the following question. You can write your programs in BASIC, C, C++, C#, FORTRAN, Java, MATLAB, Objective-C, Pascal, Perl, Python, or Tcl. Give proper indentations in your program. You only need to write the programs. Do not write the output of your programs.

1. Write a program which calculates the following formula and prints the result. (35 分)

$$\sum_{J=1}^{1000} \left(\frac{1.0}{1.0 + \sum_{K=J}^{1000} \sqrt{0.3K}} \right)$$

2. Write a program which allows the user to input 10 integers and prints the duplicate ones in the 10 inputted integers. Here are some examples:
 Example 1: If the user inputs 11 12 13 14 15 16 17 12 19 20, your program prints **No. 2 and No. 8 are the same. Both of them are 12.**
 Example 2: If the user inputs 21 22 23 24 22 26 27 30 29 30, your program prints **No. 2 and No. 5 are the same. Both of them are 22.**
No. 8 and No. 10 are the same. Both of them are 30.
 Example 3: If the user inputs 31 33 35 37 39 38 36 34 32 30, your program prints **All integers are different.**
 (35 分)

3. Based on the following flowchart, write a program which finds a solution x such that $4999.9999 < f(x) < 5000.0001$, where $f(x) = x^5 + x^3$. It is known that there exists a solution between 5 and 6 as $f(5)$ is 3250 and $f(6)$ is 7992. (30 分)



此線之後無試題

英文單字之參考中譯：
 indentation (n.) 縮排
 formula (n.) 方程式
 integer (n.) 整數
 duplicate (a.) 重覆的
 flowchart (n.) 流程圖