國立臺灣師範大學 103 學年度碩士班招生考試試題

科目：**電子計算機概論**　　適用系所：**圖書資訊學研究所**

注意：1.本試題共 1 頁，請依序在答案卷上作答，並標明題號，不必抄題。2.答案必須寫在指定作答區內，否則不予計分。

1. What is "information architecture"? What is "bibliomining"? Why are they useful for libraries? (15 分)

2. What is "software engineering"? What is "structured programming"? (10 分)

3. Write a C program to compute k^{th} Fibonacci number? (15 分)

4. What sequence of numbers would be printed if the following procedure were executed with the initial value of N being 0? (10 分)

```
Procedure A(N)
    print the value of N;
    if (N < 2) then (apply the Function A to the value N + 1)
           else (print the value of N)
    print the value of N
```

5. What sequence of numbers would be printed if the following procedure A were executed with the initial value of N being 2? (10 分)

```
Procedure A(N)
  print the value of N;
  if (N < 3)
      then (apply Procedure B to the value 4);
  print the value of N

Procedure B(N)
  print the value of N;
  apply the Procedure A to the value 5;
  print the value of N
```

6. Have you ever heard of any "Big Data" or "Open Data" services in TAIWAN? Take at least one example and describe what it did. (10 分)

7. A queue can be implemented using two stacks. Let a queue named ***Q*** to be implemented, and stacks ***stackA*** and ***stackB*** are used to implement ***Q***. Please describe the operations of pushing an element into the queue and popping an element out of the queue by the use of ***stackA*** and ***stackB*** (You can draw a figure to explain your idea). (10 分)

8. What is a digital library? What kinds of computer-science-related technologies can be used in a digital library and how to use those technologies in a digital library? (20 分)