

# 元智大學 102 學年度研究所 碩士班 招生試題卷

系(所)別： 資訊管理學系碩  
士班

組別： 資管組 A

科目： 計算機概論

用紙第 1 頁共 1 頁

●不可使用電子計算機

1. (20%) Explain the following terms.

- (1) One time password
- (2) Deadlock prevention
- (3) Social Media
- (4) Big Data

2. (10%) Explain IaaS, PaaS and SaaS in a cloud computing architecture.

3. (10%) (1) Construct a binary search tree for the input numbers: 15, 7, 5, 37, 11, 30.

(10%) (2) Show the respective pre-order and post-order sequences of the tree obtained in (1).

4. (10%) Which of the following items are overloaded functions? Explain your answer.

- (1) `int showData(){...}`
- (2) `string showData(){...}`
- (3) `int showData(int a){...}`
- (4) `int showData(double a, int b){...}`
- (5) `void showData(int a){...}`
- (6) `double showData(double a, int b){...}`

5. (10%) (1) Is the declaration of `f3()` legal or illegal? Explain your answer.

(10%) (2) Is the statement `x.c=10` legal or illegal? Explain your answer.

```
class Parent
{
    int a;
public:
    int c;
};
class Child : private Parent
{
    int d;
public:
    void f3() { a = 10; }..... (1)
};
int main()
{
    Child x;
    x.c=10; ..... (2)
}
```

6. (1) (10%) Write a program code to compute  $5^2+4^2+\dots+1^2$ .

(2) (10%) Analyze the time complexity (Big-O notation) of your program.