

臺中健康暨管理學院九十一學年度碩士班暨碩士在職專班招生考試試題紙

系 所 別	組 別	考試科目	考試日期	時 間	備 註
資訊科技與管理研究所碩士班 生物資訊研究所碩士班		計算機概論	4月7日	13:30 ~ 15:10	

I. What is the output from the following C program? (5%)

```
#include <stdio.h>
#define func(x) x*(x+3)
void main(void)
{
    int i, j, c;
    i = 4;
    j = func(i+5);
    printf("j is %d\n", j);
}
```

II. Explain the characteristics of object-oriented programming language, and arbitrarily give an example code for a class and its objects using C++ or Java. (15%)

III. Briefly describe the definitions of the first, second, third, fourth, and Boyce-Codd normal forms, and give examples to support your description. (15%)

IV. Write a recursive procedure using any language to calculate  $1*2 + 2*3 + \dots + (n-1)*n$ . (15%)

V. A tree is represented as  $A(B(CD)E(F(G)H(I(JK)L(MNO))))$ . Show its tree structure and data structure of the nodes, and then give the postorder and preorder representations. (10%)

VI. List the components of a typical operating system and summarize the role of each one. (10%)

VII. List as many as you can the network topologies for LAN, and briefly describe both the advantage and disadvantage of each one. (10%)

VIII. Differentiate the characteristics of office automation systems, transaction processing systems, decision support systems, management information systems, and expert systems that are commonly exist in companies. (10%)

IX. Consider the following graph consisting of two components, show its adjacency matrix. (10%)

