

# 淡江大學 101 學年度進學班轉學生招生考試試題

系別：資訊工程學系三年級

科目：程式語言

考試日期：7月18日(星期三) 第5節

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1. Show the output produced by each of the following program fragments. Assume that i, j, and k are int variable. (20%)

```
(a) i = 5; j = 3;
    printf("%d %d", i / j, i % j);
(b) i = 2; j = 3;
    printf("%d ", (i + 10) % j);
(c) i = 7; j = 8; k = 9;
    printf("%d ", (i + 10) % k / j);
(d) i = 1; j = 2; k = 3;
    printf("%d ", (i + 5) % (j + 2) / k);
(e) i = 7; j = 3 + --i * 2;
    printf("%d %d", i, j);
```

2. What output does the following program fragment produce? (10%)

```
i = 9384;
do{
    printf("%d ", i);
    i /= 10;
}while (i > 0)
```

3. Write the following function: (10%)

```
void swap(int *p, int *q);
```

When passed the addresses of two variables, swap should exchange the values of the variables:

```
swap(&i, &j);
```

4. Write the following function: (20%)

```
struct node *find_last(struct node *list, int n);
```

The list parameter points to a linked list; the function should return the number of times that n appears in this list. Assume that the node struct is defined as follows:

```
struct node{
    int value; /* data stored in the node*/
    struct node *next; /* pointer to the next node*/
}
```

本試題雙面印刷

背面尚有試題

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5. 請寫出河內塔的解題三步驟(Write the three steps of towerofHanoi)(10%)。請以此三步驟利用寫出河內塔的遞迴函數(Write recursive towerofHanoi function by using those three steps) (10%)。
6. 請說明什麼是指向函數的指標(Points to Functions)? 並舉例說明之。(20%)