淡江大學 98 學年度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

准帶項目請打「V」	
	計 算 機

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SECTION I. CHOICE QUESTIONS : (25 %, each question is weighted 5 points)

(　) 1. int $i, j, k, x[\,] = \{5, 7, 4, 6, 3, 8\}$;

```
for ( i= 0; i< 5; i++ ) {
    for ( j= (i+1); j< 6; j++ ) {
    k= x[i];
    x[i]= x[j];
    x[j]= k;   }   }
```

What are the contents in $x[3]$, $x[4]$ and $x[5]$?

(a) 4, 7, 5

(b) 5, 4, 3

(c) 6, 3, 8

(d) 6, 7, 8

(　) 2. What is the output of the following program?

```
static int arr[ ] = {2, 4, 6} ;
int j, *ptr;
ptr= arr;
for (j=0; j<3; j++) {
   printf ("%d", *(arr+j ) ) ;
   printf ("%d", *ptr++ ) ;   }
```

(a) 246810121416182022 24

(b) 224466

(c) 244667

(d) 24646846868968991011

(　) 3. What is the output of the following program?

```
int a=1, b=3, c=5, d=7;
a = b+d%c;
b = c++;
c += d+3*a-b;
d = ++b;
printf ("%d %d %d %d", a, b, c, d ) ;
```

(a) 0 7 3 8

(b) 5 7 14 7

(c) 5 7 22 7

(d) 5 6 23 6

(　) 4. A sequence of numbers, including 53　46　37　20　44　13　77　27　4　84　68　65　47, are placed into the circular array $c[13]$ by using the hash function $h(k)=k\%13$. If a collision is happened in $c[i]$, a number will be placed into $c[i+1]$. What is the content in $c[9]$, after all numbers have been placed into array $c[\,]$?

(a) 77

(b) 27

(c) 65

(d) 47

◀注意背面尚有試題▶

(　　) 5. What is the **Prefix expression** of the following Infix expression?

$a * (b + c) * d + e * (f / g) + h$

(a) $+ + * * a + b c d * e / f g h$

(b) $+ * a + b c * d * e / f g + h$

(c) $+ * * a + b c d e * / f g + h$

(d) $* a + b c * d + * e / f g + h$

SECTION II. PROGRAMMING QUESTIONS :

6. Give the output of the function call $f(12)$. (10%)

```
int f (int n) {
if ( n = = 0 ) return 0;
if ( n = = 1 ) return 1;
else return ( f ( n-1 ) + f ( n-2 ) );   }
```

7. Give the output of the following program, where Δ denotes a blank space.(10%)

```
void main(){
    for (int i=0; i<5; i++ ) {
`   if (i<3) {
        for (int j=0; j<2-i; j++ )
            cout<<"Δ";
        for (int k=0; k<i*2+1; k++ )
            cout<<"*";
        cout<<endl;   }
    else {
        for (int j=0;j<i-2;j++)
            cout<<"Δ";
        for (int k=0;k<(4-i)*2+1;k++)
            cout<<"*";
        cout<<endl;   }   }   }
```

8. Give the output of the following program. (10% in total)

(1) (5%)

```
void f(int c, int d) {
    c=c*d;
    d=c-d; }
void main () {
    int a=3, b=6;
    f(a,b);
    printf("a=%d, b=%d", a, b);
}
```

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(2) (5%)

```
void f (int *p, int *q) {
  *p=*q+3;
  *q=*p-2;   }
void main () {
  int a=3, b=6;
  f (&a, &b);
  printf ("a=%d, b=%d", a, b);
}
```

9. Give the output of the following program. (10%)

```
void f (const int b[ ], int s) {
  if (s>0) {
    f (&b[2], s-2);
    printf ("%d", b[0] );   }   }
int main () {
  int a[10]={9,8,7,6,5,4,3,2,1,0};
  f (a,10);
  return 0;   }
```

10. Consider the following program fragment. Let array element $a[0]$ be allocated at memory address 1000. Let each integer variable occupy 4 bytes. Please answer the following questions. (20%)

```
int *p;
int a[10]={2, 34, 45, 9, 19, 28, 5, 3, 67, 17};
p=a;
```

(1) *(a+1) =_____

(2) p =_____

(3) *p =_____

(4) p+2 =_____

(5) *(p+2) =_____

11. Object oriented programming has several important features, including *Hiding*, *Overriding* and *Overloading*. Please explain the terms of *Hiding*, *Overriding* and *Overloading*. (15%)