

淡江大學 100 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

51-1

考試日期：7月19日(星期二) 第5節

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本試題雙面印刷

1. The following statements is using the language of C, **print out the result of z and c.** (10%)

float x = 8.0F, y = 3.0F, z;

int a = 8, b = 3, c;

Print out the value of z

- (a) z = x / y;
- (b) z = a / b;
- (c) z = a / y;
- (d) z = ((float)a / b + 0.5F);
- (e) z = (a / b + 0.5F);

Print out the value of c

- (f) c = x / y;
- (g) c = a / b;
- (h) c = a / y;
- (i) c = ((int)x / y + 0.5);
- (j) c = ((int) (x / y) + 0.5);

2. The following statements is using the language of C, **print out the value of x, y and z.** (10%)

- (a) int x = 8, y = 3, z; z = (x++) + (++y);
- (b) int x = 8, y = 3, z; z = (x++) + (y++);
- (c) int x = 8, y = 3, z; z = (--x) + (y--);

- (d) int x = 8, y = 3, z; z = (--x) + (--y);
- (e) int x = 8, y = 3, z; z = (++x) + (y--);

3. The following statements is using the language of C, **print out the value of x and y.** (10%)

(a)
int x = 2, y = 3;
if (x == y) y = y * 2;

(b)
int x = 2, y = 3;
if (x = y) y = y * 2;

(c)
int x = 2, y = 3;
if (x == 0) y = y * 2;

(d)
int x = 2, y = 3;
if (x = 0) y = y * 2;

(e)
int x = 0, y = 3;
if (x == 0) y = y * 2;

4. Print out the output of the following program. (10%)

```
#include <stdio.h>
void PrintStar(int);
void PrintTriangle(int);
void PrintStar(int n)
{
    if(n<=0) return;
    printf("*");
    PrintStar(n-1);
}
```

```
void PrintTriangle(int n)
{
    if(n<=0) return;
    PrintStar(n);
    printf("\n");
    PrintTriangle(n-1);
}
int main(void)
{
    PrintTriangle(6);
    return 0;
}
```

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5. Print out the output of the following program. Suppose **the address of x[0] is 2000, sizeof(int) = 4.** (10%)

<pre>#include <stdio.h> int main() { int x[3] = {100,200,300}; int *intPtr; intPtr = x; printf("intPtr = %d\n", intPtr); printf("*intPtr = %d\n", *intPtr); printf("intPtr[0] = %d\n", intPtr[0]); printf("intPtr+1 = %d\n", intPtr+1); printf("(intPtr+1) = %d\n", *(intPtr+1)); printf("*intPtr+1 = %d\n", *intPtr+1); printf("intPtr[1] = %d\n", intPtr[1]); }</pre>	<pre>intPtr = intPtr+1; printf("*intPtr = %d\n", *intPtr); printf("intPtr[0] = %d\n", intPtr[0]); printf("intPtr[1] = %d\n", intPtr[1]); return 0; }</pre>
--	--

6. The following program is used “*call by value*” to pass the arguments, the output is “**Your height is 0 feet 0 inches**”. To use “*call by address*” to correct this problem. (10%)

<pre>#include <stdio.h> void conversion(int, int, float); int main() { int cm = 0, feet = 0; float inches = 0; printf("Input your height (cm) :"); scanf("%d", &cm); conversion(cm, feet, inches); printf("Your height is %d feet %f inches\n", feet, inches); return 0; }</pre>	<pre>void conversion(int cm, int feet, float inches) { feet = (int)(cm/2.54/12); inches = cm/2.54-feet*12; }</pre>
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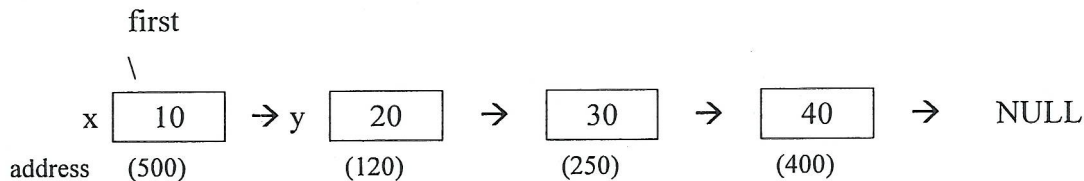
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7. Print out the output of the following program. (10%)

<pre>#include <stdio.h> void Fun(); void Fun() { static int x = 0; int y = 0; printf("x = %d\n", ++x); printf("y = %d\n", ++y); }</pre>	<pre>int main() { Fun(); Fun(); Fun(); return 0; }</pre>
---	--

8. The following list has 4 nodes. The first node named *x* and there is a pointer *first* points to node *x*. (10%)



The structure of node is

```
class Node {
public:
    int data;
    Node *link;
};
```

Fill in the answer (if any) in each of the following questions. (if the syntax is error, the answer is "error")

- (a) $y = ?$ (b) $y.data = ?$ (c) $y.link = ?$ (d) $y->data = ?$ (e) $y->link = ?$
(f) $first = ?$ (g) $first->data = ?$ (h) $first->link->data = ?$ (i) $first->link->link = ?$ (j) $first->data->link = ?$

9. Using C++ or Java to implement the following specifications. (10%)

- (a) Create a class named *MyClass*.
(b) This class has an integer data member named *myData*.
(c) There is a constructor to setup the initialize value of *myData* to zero.
(d) There is a member function (method) named *myMethod* to setup the value of *myData* as the argument *x*.

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10.

```
#include <new>
int main()
{
    int *intPtr;
    float *arrayPtr;

    intPtr = new (a);
    arrayPtr = new (b);
```

```
delete (c);
delete (d);
return 0;
}
```

- (a) Allocate an integer. (2%)
- (b) Allocate a floating array that has 20 elements. (3%)
- (c) Delete the integer that allocated at (a). (2%)
- (d) Delete the integer array that allocated at (b). (3%)