

2010.1 Midterm Exam : C Programming [4/22 8pm-9:20pm(80minutes)]

Student Id. : (_____) , Name : (_____)

※ You may use either Korean or English for your answer.

1. (15points) Write a C program that calculates and prints the product(곱) of the odd integers (홀수) from 1 to 15. Use printf function for printing the result of the calculation.

//Write your C code in this box.

2. (15 points) You can see a C program and its output results as follows.

Fill out the blanks (1), (2), (3) in the following C program.

```
#include <stdio.h>

int main()
{
    int i,j;
    for ( (1)_____ ) {
        for ( (2)_____ ) printf(" ");
        for ( (3)_____ ) printf("*");
        printf("\n");
    }
    return 0;
}
```

Output :

```
*
***
*****
*****
*****
```

3. (20 points) Write a C program that gets an arbitrary number of positive integer values from keyboard and prints the smallest value and the biggest value. To end keyboard input, give -1 as an input. For example,

Key board Input :

```
13
7
11
2
55
42
31
9
6
-1
```

Output :

```
2 55
```

//Write your code in this box.

4. (10points) Consider following C function.

```
double a(unsigned int y, double x)
{
    if (y==0) return 1;
    return x*a(y-1,x);
}
```

What is the return value of `a(3,7.0)`?

(Answer : _____)

5. (5points) What does the function `f` do?

Explain. (_____)

```
int f(int x, int y)
{
    return (x<y) ? x : y;
}
```

6. (10 points) What is the value of `x` and `y` after executing following statements.

```
int x=2 , y=3;
y *= 3 - (x++)/3;
```

(Answer: `x=_____` , `y=_____`)

7. (10 points) When we execute following C program, what will be printed by `printf` function?

(_____)

```
#include <stdio.h>
int main()
{
    short x=0x13;
    short y=21;
    printf("%d , %d\n", x & y , x | y);
    return 0;
}
```

8. (15points) Explain in detail what each of following concepts means.

(1) Call-by-Value (pass-by-value) :

(_____)

(2) Dangling Else Problem :

(_____)

(3) Explain the difference between global variables and local variables.

(_____)