

Q1. What will be printed by the following code?

```
#include <stdio.h>
int f(int n){
    if(n > 0) return n + f(n-1);
    return 0;
}
void main(){
    printf("%d", f(5));
}
```

- a. 15 b. 10 c. 0 d. syntax error

Q2. What will be printed by the following code?

```
#include <stdio.h>
int f(int n){
    if(n==0) return 0;
    f(n-1);
    printf("%d", n);
}
void main(){
    f(5);
}
```

- a. 12345 b. Syntax error
c. Nothing printed d. 54321

Q3. The following recursive function *fun()* calculates and returns _____.

```
int f(int x, int y){
    if (x == 0) return y;
    return f(x - 1, x + y);
}
```

- a. $(1 + 2 + \dots + x-1) + y$
b. $1 + 2 + \dots + x-1 + x$
c. $(1 * 2 * \dots * x-1 * x) + y$
d. $(1 + 2 + \dots + x-1 + x) + y$

Q4. What will be printed by the following code?

```
#include <stdio.h>
void fB(int n);
void fA(int n) {
    if (n > 0) {
        printf("%d ", n);
        fB(n-1);
    }
}

void fB(int n) {
    if (n > 1) {
        printf("%d ", n);
        fA(n / 2);
    }
}

void main(){
    fA(5);
}
```

a. 5 2

b. 5 4 2

c. 5 4 2 1

d. Printing "5" for infinity

Q5. Select the correct option that completes the following recursive C function. The function computes and returns the sum of digits of its parameter integer n .

Test data: The sum of digits of 57 = 12

```
#include <stdio.h>
int f(int n){
    if(n == 0) return 0;    // base case
    return _____;    //recursive base
}

void main(){
    int n = 57;
    printf("The sum of digits of %d = %d", n, f(n));
}
```

a. $(n / 10) + f(n \% 10)$

b. $(n \% 10) + f(n / 10)$

c. $(n \% 10) + f(n - 10)$

d. $1 + f(n / 10)$