



# CS & IT ENGINEERING

## C-Programming

Function & Storage Class  
Discussion Notes

DPP.- 01



By- Abhishek Sir

#Q. Consider the following program:

```
#include<stdio.h>
int f2(int5a){
    int b=0;    b = 0
    b=b+5;      b = 0+5 = 5
    return a*b;
}              25
int f1(int a){    a = 5
    int b;        b = f2(a)
    b=f2(a);      b = 25
    return a*b;
}
```

```
int main(){
    int i, a=5, b=4;
    for(i=0;i<2;i++){
        b-=f1(a)-f2(a);
        printf(5"%d\t",5b);
    }
    return 0;
}
```

$a = 5$     $b = 4$   
 $i = 0$     $-96$   
 $-196$   
 $i = 1$     $-292$   
 $b = b - (f_1(a) - f_2(a))$   
 $125 - 25$   
 $4 - 100 = -96$   
 The sum of the printed values is  $-292$   
 $-96 - (125 - 25)$   
 $-96 - 100 = -196$

#Q. Consider the following program:

```
#include<stdio.h>

int f2(int a){
    int b=0;
    b=b+5;
    return a*b;
}

int f1(int a){
    int b;
    b=f2(a);
    return a*b;
}
```



# [MCQ]



#Q. Consider the following program:

```
#include<stdio.h>
void print(int n){
    for(n++;n++;n++)
        printf("GATE Wallah");
}
int main(){
    void print(); ✓
    void print(); ✓
    print(-9);
    return 0;
}
```

Which of the following is correct?

Handwritten analysis of the program:

The program has a recursive function `print` and a `main` function. The `print` function is defined as:

```
void print(int n){
    for(n++;n++;n++)
        printf("GATE Wallah");
}
```

The `main` function calls `print` recursively. The sequence of calls is shown as a stack of numbers:

$-9, -8, -7, -6, -5, -4$

The stack grows downwards, with  $-9$  at the top and  $-4$  at the bottom. The stack is represented by a vertical line with circles containing the numbers. The stack is shown as:

$\begin{matrix} -9 \\ -8 \\ -7 \\ -6 \\ -5 \\ -4 \end{matrix}$

The stack is shown as a vertical line with circles containing the numbers. The stack is shown as:

$\begin{matrix} -9 \\ -8 \\ -7 \\ -6 \\ -5 \\ -4 \end{matrix}$

The stack is shown as a vertical line with circles containing the numbers. The stack is shown as:

$\begin{matrix} -9 \\ -8 \\ -7 \\ -6 \\ -5 \\ -4 \end{matrix}$

- A Compilation error
- B "GATE Wallah" will be printed infinite number of times.
- C "GATE Wallah" will be printed 5 times.
- D "GATE Wallah" will be printed 4 times. ✓

# [MCQ]



#Q. Consider the following program.

```
#include<stdio.h>
void f(int n){
    switch(n<<1+n){
        default: printf("Sresth");
        case 4: printf("Parakram");
        case 3: printf("2024");
        break;
        case 2: printf("2025");
    }
}
```

$(n = 1)$

$$n \ll 1+1$$
$$1 \ll 2 = 1 \times 2^2 = 4$$

```
int main(){
    f(1);
    return 0;
}
```

The output is-

- ☒ A Parakram2024
- ☐ B SresthParakram2024
- ☐ C Parakram
- ☐ D Sresth2025

#Q.

Consider the following program:

```
#include<stdio.h>
```

```
int f(int b, int a){
```

```
    int x; 1 2
```

```
    x=a<<b;
```

```
    b=x*a--;
```

```
    return a+b-x;
```

```
}
```

```
int main(){
```

```
    printf("%d", f(1,2));
```

```
    return 0;
```

```
}
```

The value printed is 5. $f(1,2)$  $x \boxed{4} \quad a \boxed{2} \boxed{1}$ 

$$x = 2 \ll 1 = 2 \times 2^1 = 4$$

$$b = 4 * 2 = \textcircled{8}$$

$$1 + 8 - 1 = \textcircled{5}$$

# [MCQ]



#Q.

Consider the following program:

```
#include <stdio.h>
```

```
int r(int num){
```

```
    return --num;
```

```
}
```

```
int main(){
```

```
    int n=4;
```

```
    for (r(n);r(n++);r(--n))
```

```
        printf("%d\t",r(--n));
```

```
    return 0;
```

```
}
```

The output is-

Handwritten notes and code corrections:

$\frac{4}{w}$  ~~5~~ ~~4~~  $\frac{+3}{w}$  ~~4~~ ~~3~~ ~~2~~ ~~3~~ ~~2~~ ~~1~~ 2

$\frac{r(n)}{}$

```
while( $\frac{r(n++)}{}$ ) {
```

```
    printf( $\frac{r \% 0d}{}$ ,  $\frac{r(--n)}{}$ );
```

$\frac{r(--n)}{}$

}

Handwritten output: 3, 2, 1

A

1 2 3

B

1 2 3 4

C

3 2 1

D

4 3 2 1

Handwritten output: 3, 2, 1 (circled)





**THANK - YOU**

