Branch : CSE & IT Batch:English

Programming in C

Function

DPP-01

[NAT]

1. 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;
    }
    int main(){
        int i, a=5, b=4;
        for(i=0;i<2;i++){
            b-=f1(a)-f2(a);
            printf("%d\t", b);
        }
        return 0;
    }
```

The sum of the printed values is _____

[MCQ]

2. 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?

(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]

3. 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");
    }
}
int main(){
    f(1);
    return 0;
}
```

The output is-

(a) Parakram2024

(b) SresthParakram2024

(c) Parakram

(d) Sresth2025

[MCQ]

4. Consider the following program:

```
#include<stdio.h>
void f(){
int x;
x=10<5?printf("%d",
printf("GATE")):printf("")?printf("2024"):printf("%d
",printf("Wallah Parakram"));
}
int main(){
   f();
   return 0;
}
```

The output is-

(a) GATE2024

(b) Wallah Parakram15

(c) GATEWallah Parakram4

(d) GATE4

[NAT]

5. Consider the following program:

```
#include<stdio.h>
int f(int b, int a){
   int x;
   x=a<<b;
   b=x*a--;
   return a+b-x;
}
int main(){
   printf("%d", f(1,2));
   return 0;
}
```

The value printed is _____.

[MCQ]

6. 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-

(a) 1 2 3

(b) 1 2 3 4

(c) 3 2 1

(d) 4 3 2 1

Answer Key

1. **(–292)**
2. **(d)**
3. **(a)**
4. **(b)**
5. **(5)**
6. **(c)**

Hints and Solutions

1. (–292)

For i=0:

f1(5):

Line 1: int b;

Line 2: b=f2(5);//b=25

Line 3:return 5*25; //return 125 to main().

f2(5):

Line 1: int b=0;

Line 2: b=b+5;//b=5

Line 3: return 5*5;//return 25 to f1.Go to Line 3 of f1(5)

f2(5):

Line 1: int b=0;

Line 2: b=b+5;//b=5

Line 3: return 5*5;//return 25 to main().

b in main() is updated to: b=b-f1(a)+f2(a)=4-125+25=-96.

For i=1:

f1(5):

Line 1: int b;

Line 2: b=f2(5);//b=25

Line 3:return 5*25; //return 125 to main().

f2(5):

Line 1: int b=0;

Line 2: b=b+5;//b=5

Line 3: return 5*5;//return 25 to f1.Go to Line 3 of f1(5)

f2(5):

Line 1: int b=0;

Line 2: b=b+5;//b=5

Line 3: return 5*5;//return 25 to main().

b in main() is updated to: b=b-f1(a)+f2(a)=-96 -125+25=-196.

Output is: -96 -196

Sum= -292

2. (d)

```
int main(){
   void print();//No compilation error
   void print();//No compilation error
   print(-9); //print(-9) is called.
   return 0;
}
print(-9){//n=9
for(n++; n++                    ;n++)
     -9   -8 ->printf() is executed    -7
          -6 ->printf() is executed    -5
          -4 ->printf() is executed    -3
          -2 ->printf() is executed    -1
           0 -> Loop terminates
}
```

"GATE Wallah" will be printed four times.

3. (a)

```
f(1):
n=1;
switch(n<<1+n){
//switch(1<<2) i.e switch(4)
      default: printf("Sresth");
      case 4: printf("Parakram");
      //case 4 is executed.
      //since no break is there case 3 will also be
     executed.
      case 3: printf("2024");
      break;
      case 2: printf("2025");
}
```

Output: Parakram2024

4. (b)

f():

x = 10<5?printf(“%d”, printf(“GATE”));

printf(“”)?printf(“2024”);

printf(“%d”, printf(“Wallah Parakram”));

10<5 is FALSE. So, printf("") is evaluated. It prints nothing and hence returns 0.

0 means FALSE. So, printf("%d",printf("Wallah Parakram")) is evaluated.

Output: Wallah Parakram15

5. (5)

f(1,2):
b=1, a=2;
x=a<<b; //x=2<<1= 4
b=x*a--;//b=4*2=8. After this, a is decremented to 1.
return a+b-x; // return 1+8-4 i.e. return 5.
main():
printf("%d", f(1,2));//5 is printed.
Output: 5

6. (c)

r(4)=3. //Intialization

r(n++)or r(4)=3->TRUE// Condition check

n is incremented to 5.

printf("%d\t",r(--n));// printf("%d\t",r(4))

//3 is printed.

r(--n) or r(3) is called.

r(n++)or r(3)=2->TRUE// Condition check

n is incremented to 4.

printf("%d\t",r(--n));// printf("%d\t",r(3))

//2 is printed.

r(--n) or r(2) is called.

r(n++)or r(2)=1->TRUE// Condition check

n is incremented to 3.

printf("%d\t",r(--n));// printf("%d\t",r(2))

//1 is printed.

r(--n) or r(0) is called.

r(n++)or r(1)=0->FALSE//Loop terminates.

Output: 3 2 1