

CS & IT ENGINEERING

Programming in C

Functions and Storage Classes

DPP-01 Discussion Notes



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TOPICS TO BE COVERED

01 Question

02 Discussion

Q.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 _____

a 5

b 4-96

[NAT]

i=0

b -= f1(a) - f2(a);

125 - 25

b = 100

b = b - 100

$\Rightarrow b = 4 - 100 = -96$

-96 + (-196)

$\Rightarrow -292$

i=1

b = f1(a) - f2(a)

f1(5)

125 - 25

b = 100

b = b - 100;

= -96 - 100

5 - -196

-196

Q.2

[MCQ]



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?

-8 → True ✓

-6 → True ✓

-4 → True ✓

-2 → True ✓

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.

No problem

} declaration

(D)

Q.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-

[MCQ]



+
<<

n | 1

n << 1 + n
1 + 1

n << 2

⇒ n × 2²

⇒ 1 × 2²

⇒ 4

A.

B.

C.

D.

A

Parakram2024

SresthParakram2024

Parakram

Sresth2025

Q.4

Consider the following program:

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

```
void f0{
```

```
int x;
```

```
x=10<5?printf("%d",
```

```
printf("GATE")):printf("")?printf("2024"):printf("%d",printf("Wallah  
Parakram")));
```

```
}
```

```
int main0{
```

```
f0;
```

```
return 0;
```

```
}
```

The output is-

A.

GATE2024

C.

GATEWallah Parakram4

B.

Wallah Parakram15

D.

GATE4

x

x = pf("./d", pf("wallah Parakram"));

[MCQ]



x = pf("./d", 15)

x = pf("") ? pf("2024") : pf("./d", pf("wallah Parakram"));

x = 10 < 5 ?

exp1

exp2

False

Wallah Parakram15

exp3

pf("") ? pf("2024") : pf("./d",

pf("wallah Parakram"));

Q.5

[NAT]



Consider the following program:

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

```
int f(int 1b, int 2a){
```

```
    int x;
```

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

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

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

```
}
```

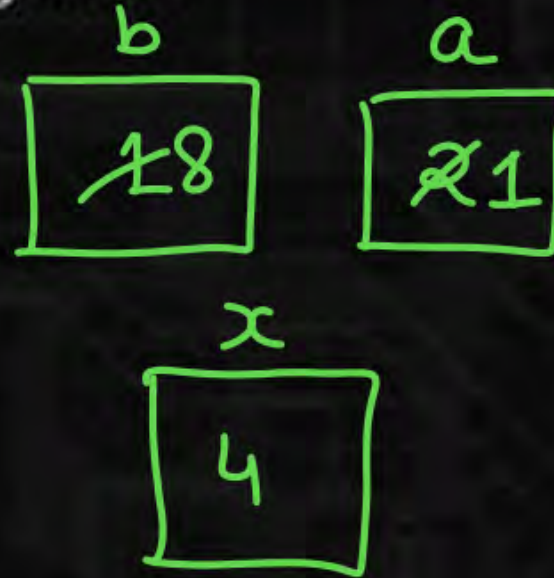
```
int main(){
```

```
    printf("%d", 5f(1,2));
```

```
    return 0;
```

```
}
```

The value printed is 5.



$$1 + 8 - 4 = 5$$

$$2 \ll 1$$

$$\Rightarrow 2 \times 2^1 \Rightarrow 4$$

$$b = x \times a--$$

(i) use a

(ii) $a = a - 1$

$$b = x \times a$$
$$a = a - 1$$

$$b = 4 \times 2 = 8$$

Q.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.

123

B.

1234

C.

321

D.

4321

[MCQ]



Handwritten analysis of the for loop:

```
for( ① r(n)3; ② r(n++)3.0; ③ r(--n)2.0 )  
{  
    printf("/.d\t", r(--n)④ r(4));  
}
```

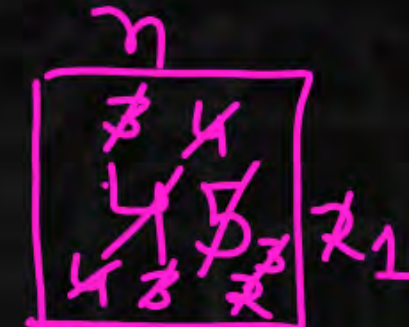
The loop runs 3 times.

$r(4) \Rightarrow 3$

$r(4) \Rightarrow 3$

$r(3) \Rightarrow 2$

$r(2) \Rightarrow 1$



o/p. 3 2 1

