



CS & IT ENGINEERING

C-Programming

Function & Storage Class

DPP 02 Discussion Notes



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Question



#Q. The value printed by the program is

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

```
int fun(){  
    int i = 5;  
    int a = i++;  
    printf("%d",a);  
    return i;  
}
```

```
int main()  
{  
    fun();  
    return 0;  
}
```

~~i = 6~~

int a = 5

a | 5 |

printf(5)

output is 5

Question

#Q. Output of the program is

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

```
int fun(){
```

```
    int i = 5;
```

```
    int a = i++;
```

```
    printf("%d",a);
```

```
    return i;
```

```
}
```

```
int main(){
```

```
    printf("%d", fun()+fun());
```

```
    return 0;
```

```
}
```

$i = 5/6$
 $a = 5$

output : Main

fun() + fun()

$i = 5/6$

$a = 5;$

printf () $\leftarrow 5$

5512

Ans 5512

Question



#Q. #include <stdio.h>

void fun()

{

static int x=10; ←

x+= 20;

printf("%d ",x);

}

int main()

{

//int a = 10, b=20;

//int c;

fun();

fun();

return 0;

}

Out put of the program is

a = 10 , b = 20

x = 10

x + 20

30

print 30

x = 30

[c]

fun

static variable

x += 30

x = 30 + 20

= 50

printf (50)

A

10, 20

B

30, 40

C

30, 50

D

30, 30

Question



#Q. #include <stdio.h>
int fun(int a, int b, int c)

{
 a&=10; ✓
 b^=20;
 c<<=3;

return a+b+c;
}

int main()
{

 printf("%d", fun(5, 23, 4));

}

The value printed is

[A] Answer

fun(5, 23, 4)

a=5, b=23, c=4

a = 000101

b = 010111

c = 000100

bit wise

000101

001010

000000

010111

010100

000111

c<<=3

4 × 2³ = 32

A

35

B

40

C

20

D

7

Question

#Q. Consider the following Program

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

```
void fun()
```

```
{
```

```
    int i=1, j=1; condition  
    for(;; j; printf("%d%d\t", i, j))  
        j=i++ <= 5;
```

```
}
```

```
int main()
```

```
{
```

```
    fun();
```

```
}
```

A

11 22 33 44 55

C

21 31 41 51 61 70

[C]

function for loop

$i=1, j=1$

$j = i++ <= 5$

$j = 1 <= 5$

$j = 1, i = 2$

21

$j = 2 <= 5$

$j = 1, i = 3$

$j = 4 <= 5$

$j = 1, i = 5$

31

$j = 5 <= 5$

$j = 1, i = 6$

61

$j = 6 <= 5$

$j = 0, i = 7$

70

B

21 31 41 51 61

D

Infinite loop

Question

```
#Q. #include<stdio.h>
int fun(long int n)
{
    unsigned long int i, j=0, sum = 0;
    for( i=n; i>1; i=i/2)
        j++;
    for( ; j>1; j=j/2)
        sum++;
    return sum;
}
int main()
{
    printf("%d", fun(128));
}
```

The value printed by the program is 2

$\text{fun}(128)$

$$n = 128 = 2^7$$

$\text{for}(i=n; \underline{i>1}; i=i/2)$

$$2^7 \leftarrow \text{start}$$

$$2^6$$

$$2^5$$

$$2^4$$

$$2^3$$

$$2^2$$

$$2^1$$

$$2^0 \leftarrow$$

$j=7$ at end 2^0 of first for loop

$\text{for}(; j>1, j=j/2)$

$$\lfloor \log_2 7 \rfloor = 2$$



Question



fun - loop

```
#Q. #include<stdio.h>
void fun () {
    for (int i = 1; i <= 10; i++)
    {
        if (i > 5)
        {
            break;
        }
        printf("%d\n", i); ✓
    }
}
int main()
{
    fun();
}
```

i = 1 ✓
i = 2 ✓
i = 3 ✓
i = 4 ✓
i = 5 ✓
i = 6
i = 7
i = 8
i = 9
i = 10

} 5

A

4

B

5

C

7

D

11

Number of times print statement executed is 5 times

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=3;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++; ✓
            if(j==2) break;
        }
    }
}
```

[c]

```
return count ;
}
```

```
int main()
```

```
{
```

```
    printf("%d",fun());
```

```
}
```

Out put of the program is

A

4

B

5

C

6

D

7

	$i = 1$	_____	$\frac{j = 1, j = 2 \dots j = 20}{\uparrow}$, <u>count</u> <u>count = 2</u>
outer loop	$i = 2$		$\frac{j = 1}{\text{count } 3} \cdot \frac{j = 2}{\text{count } 4}$
	$i = 3$		$\frac{j = 1}{\text{count } 5} \quad \frac{j = 2}{\text{count } = 6}$

Ans. 6

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=6;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++;
            if(j==2||j>5) break;
        }
    }
}
```

[0]

```
return count ;
}
```

```
int main()
```

```
{
```

```
    printf("%d",fun());
```

```
}
```

Out put of the program is

A 14

B 15

C 16

D 12

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=6;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++;
            if(j==2||j>5) break;
        }
    }
}
```

```
return count ;
}
```

```
int main()
```

```
{
    printf("%d",fun());
}
```

Out put of the program is

<u>i = 1</u>	<u>j = 1, j = 2, j = 3, j = 4, j = 5, ... j = 20 - 2</u>	
i = 2		<u>2</u>
i = 3		<u>2</u>
i = 4		<u>2</u>
i = 5		<u>2</u>
i = 6		<u>2</u>
	6 x 2 = 12	<u>12</u>

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=3;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++;
            if(i==2) break;
        }
    }
```

↑
[A] i=2 then

```
return count ;
}
```

```
int main()
```

```
{
    printf("%d",fun());
}
```

Out put of the program is

☒ **A** 41

☐ **B** 51

☐ **C** 42

☐ **D** 22

20 time

$i = 1$ $j = 1, j = 2, j = 3 \dots 20$ — $count = 20$

$i = 2$ — $j = 1$, $count = 21$, $i == 2$ break

$i = 3$ — $j = 1$ — $j = 20$ — 41

Ans = 41

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=6;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++;
            if(i==2||i>=5) break;
        }
    }
}
```

[B]

```
return count ;
}
```

```
int main()
```

```
{
```

```
    printf("%d",fun());
```

```
}
```

Out put of the program is

A

41

☒ **B**

63

C

42

D

22

Question



#Q. Consider the following program

```
#include<stdio.h>
int fun()
{
    int i,j;
    int count=0;
    for(i =1;i<=6;i++)
    {
        for(j=1;j<=20;j++)
        {
            count++;
            if(i==2||i>=5) break;
        }
    }
```

Ans: 63

```
return count ;
}
int main()
{
    printf("%d",fun());
}
```

Out put of the program is

i = 1	—	j = 1	—	j = 20	—	20
i = 2	—	j = 1	—		—	21
i = 3	—	j = 1	—	j = 20	—	41
i = 4	—	j = 1	—	j = 20	—	61
i = 5	—	j = 1	—		—	62
i = 6	—	j = 1	—		—	63



THANK - YOU

