

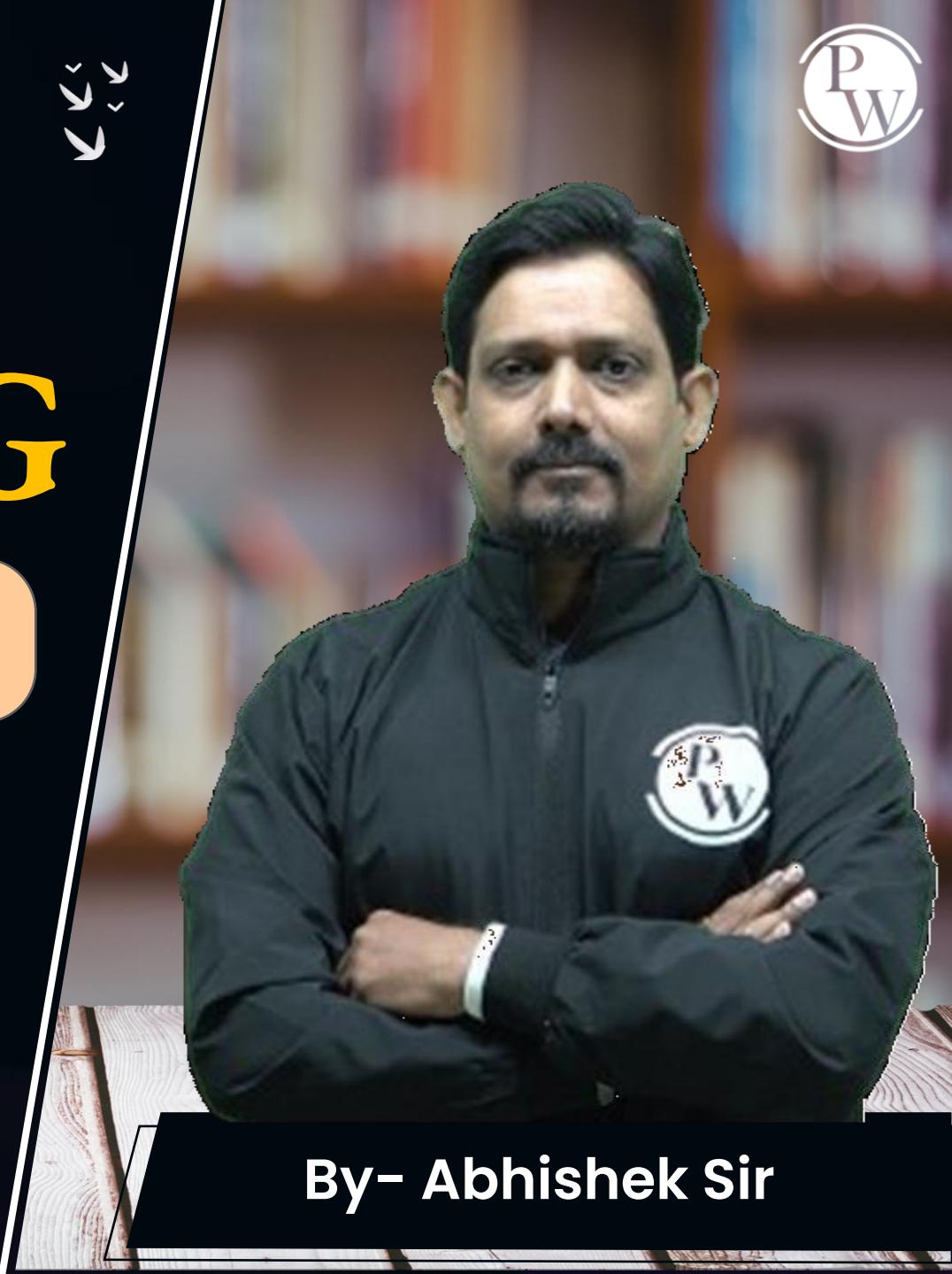


CS & IT ENGINEERING

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 = 5/6

int a = 5

a [s]

printf(s)

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;
```

```
}
```

$$\left. \begin{array}{l} i = 5 \\ a = 5 \end{array} \right\}$$

Output : Main

fun() + fun()
 }
i = 5 / 6
a = 5 ;
printf() ← 5

5 5 12

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

$$a = 10 , \quad b = 20$$

$$\begin{aligned} x &= 10 \\ x + 20 &= \\ 30 & \\ \text{printf } & 30 \\ x &= 30 \end{aligned}$$

(c)



C

30,50

fun

static variable

$$\begin{aligned} x + &= 30 & x &= 30 + 20 \\ & & &= 50 \end{aligned}$$

printf (50)

B 30, 40

D 30, 30

Question

```
#Q. #include <stdio.h>
int fun(int a, int b, int c)
{
    a&=10; bit wise
    b^=20;
    c<<=3;
    return a+b+c;
} 0+3+32
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

$$\begin{array}{r}
 000101 \\
 001010 \\
 \hline
 0\ 0\ 0\ 0
 \end{array}$$

$$\begin{array}{r}
 010111 \\
 010100 \\
 \hline
 00011
 \end{array}$$

$$\begin{array}{r}
 4 \times 2^3 = 32
 \end{array}$$

A 35

B 40

C 20

D 7

Question



function for Loop

#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(); (2)
```

(2) $j = 3 \leq 5$ $\left\{ \begin{array}{l} j = 1, i = 4 \end{array} \right.$ q_1

A

11 22 33 44 5X

C

21 31 41 51 61 70

[c]

$i = 1, j = 1$

$j = \frac{i++ \leq 5}{j = 1 \leq 5}$

$j = 1, i = 2$

21

$j = 2 \leq 5$

$j = 1, i = 3$

31

$j = 4 \leq 5$

$j = 1, i = 5$

$j = 5 \leq 5$

$j = 1, i = 6$

61

B 21 31 41 51 61

D Infinite loop

$j = 6 \leq 5$

$j = 0, i = 7$

70

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 $\lfloor \log_2 7 \rfloor = 2$

fun(128)

$$n = 128 - 2^7$$

for($j = n$; $j > 1$; $j = j/2$)

$$2^7 \leftarrow \cancel{2^7}$$

$$2^6$$

$$2^5$$

$$2^4$$

$$2^3$$

$$2^2$$

$$2^1 \leftarrow$$

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

for(\cdot ; $j > 1$, $j = j/2$)

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

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();
}
```

$i = 1 \checkmark$
 $i = 2 \checkmark$
 $i = 3 \checkmark$
 $i = 4 \checkmark$
 $\underline{i = 5 \checkmark}$
 $i = 6$
 $i = 7$
 $i = 8$
 $i = 9$
 $i = 10$

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

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

Outer Loop $i = 2$

$j = 1$. $j = 2$
count 3 . count 4

$i = 3$

$j = 1$ $j = 2$
count 5 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;
        }
    }
}
```

[D]

```
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;
        }
    }
}
```

↑
None

```
return count;
}
```

```
int main()
{
```

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

Out put of the program is

i = 1
i = 2

i = 3

i = 4

i = 5

i = 6

j = 1, j = 2, j = 3, j = 4, j = 5, ... j = 20 - 2

— 2

— 2

— 2

— 2

— 2

$$6 \times 2 = 12$$

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;
        }
    }
}
```

C 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

$i = 1 \quad j = 1, j = 2, j = 3 \dots 20 - \text{count} = 20$

$i = 2 \quad j = 1, \text{count} = 21, i = 2 \quad \text{break}$

$i = 3 \quad j = 1 \quad j = 20 \quad - \underline{41}$

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

$i = 1 \quad j = 1 \quad j = 20 \quad 20$
 $i = 2 \quad j = 1 \quad 21$
 $i = 3 \quad j = 1 \quad j = 20 \quad 41$
 $i = 4 \quad j = 1 \quad j = 20 \quad 61$
 $i = 5 \quad j = 1 \quad 62$
 $i = 6 \quad j = 1 \quad 63$



THANK - YOU