

C Programming

Control Flow Statement



DPP-01

[NAT]

1. `#include <stdio.h>`
`int main(void){`
`int i = 2, j = 3, k = 4;`
`if (i < j ? 1 : 0)`
`printf("GATE");`
`else`
`printf("Wallah2023");`
`return 0;`
`}`
 The output of the program is _____.

[MCQ]

2. `#include <stdio.h>`
`void main() {`
`int a, b, c, d;`
`a = 2; b = -1; c = 3; d = -4;`
`if(a = b - c - d)`
`printf("%d%d%d", a++, b--, c++);`
`else`
`printf("%d%d%d", c--, ++a, ++b);`
`}`
 The output is _____.
 (a) 1 -2 4
 (b) 3 1 0
 (c) 2 1 -3
 (d) 3 3 0

[MCQ]

3. `#include <stdio.h>`
`int main(void){`
`int a = 3 > 2 ? 0 : 1 : 5;`
`if(a == a - 1)`
`printf("GATE 2023");`
`else`
`printf("GATE WALLAH");`
`return 0;`
`}`
 The output of the program is _____.
 (a) GATE 2023

- (b) GATE WALLAH
 (c) Compiler error
 (d) Garbage value

[NAT]

4. `#include <stdio.h>`
`void main() {`
`int a;`
`a = printf("GATE Wallah 2023");`
`if(a%4 == 0)`
`a = a + 5;`
`else`
`a = a - 5;`
`printf("%d", a++);`
`}`
 The value of a at the end of the program is ____.

[NAT]

5. `#include <stdio.h>`
`void main() {`
`int i, j, k;`
`j = 4;`
`k = 0;`
`i = j < k ? k : j --;`
`if(j < i)`
`j = j + k - 1;`
`if(j == i)`
`j = j - i;`
`else`
`j = j + --k,`
`printf("%d", j + k - i);`
`}`
 The output is ____.

[NAT]

6. Consider the following program:
`#include <stdio.h>`
`int main()`
`{`
`int a=19, b=20;`

```

if(a++<b--) printf("%d",a+++--b);
else printf("%d", ++a+--b);
return 0;
}

```

The output is _____.

[MCQ]

7. #include<stdio.h>
 void main()
 {
 int a=0;
 printf("%d", a);
 if(a=2){
 printf("Hi");
 printf("%d",a);
 }else{
 printf("Bye");
 }
 printf("%d", a);

```

}

```

The output string is:

- (a) 0Hi22 (b) 0Hi20
 (c) 0Bye0 (d) 0Hi00

[MCQ]

8. #include<stdio.h>
 void main()
 {
 int a=0, b=0;
 a=(a=4)||(b=1);
 if(a&&b) printf("CProgramming");
 else printf("PankajSharma");
 printf("%d",b);
 }

The output is-

- (a) CProgramming0
 (b) CProgramming1
 (c) PankajSharma0
 (d) PankajSharma1

Answer Key

1. (GATE)
2. (b)
3. (b)
4. (22)
5. (−4)

6. (38)
7. (a)
8. (c)



Hints and solutions

1. (GATE)

$i < j ? 1 : 0$

In the above expression i value is less than j value, hence it will return 1.

So, it will print GATE.

2. (c)

$a = -1 - 3 + 4$

$a = 0$

$a \neq 0$

Assignment operator assigns and returns the value

$b[++b : -1] 0$,

$a[++a : 0] 1$,

$c[c-- : 2] 2$

↓

Post decrement (It will print 3, then update to 2)

Output: 3 1 0

3. (b)

$a = \frac{3 > 2}{\downarrow} ? \boxed{0 \text{ ? } 0 : 1} : 5$
True

$a = 1$

Assignment operator assigns the value and returns it

if $\underbrace{(a = a - 1)}_0$

↓

Condition: false

Output: GATE WALLAH

4. (GATE Wallah 202321)

GATE Wallah 2023

↓

$a = 16$

printf returns the number of characters successfully printed

$16 \% 4 = 0 \rightarrow \text{True}$

↓

$a = a + 5$

$a \quad \boxed{16 \quad 21 \quad 22}$

Hence the final value of a is 22.

5. (-4)

$i \quad j \quad k$
 $4 \quad \cancel{4} \quad \cancel{0} \quad -1$
 $\quad \quad \quad \cancel{3} \quad \cancel{2} \quad 1$

$3 < 4$

$j = 3 + 0 - 1 = 2$

$2 \neq 4$

$j = j - 1$

$= 2 - 1$

$j = 1$

printed value = $j + k - i$

$= 1 - 1 - 4$

$= -4$

6. (38)

If $(19 < 20) \rightarrow$ Condition is true. After the condition is evaluated, a is incremented to 20 and b is decremented to 19.

Now, $\text{printf}("%d", a++++-b);$ is evaluated. b is decremented to 18. So, $(20+18)$ i.e. 38 is printed. After that, a is incremented to 21.

Hence, output is 38.

7. (a)

void main()

{

int $a=0$;

printf("%d", a); // 0 is printed

if($a=2$){ // Assignment operator assigns and returns the assigned value; So 2 is assigned to a and 2 is returned.

Any non-zero value is considered true.

printf("Hi");// "Hi" is printed

```
printf("%d",a);//Since a contains 2, 2 is printed.
}else{
    printf("Bye");
}
printf("%d", a); //Since a contains 2, 2 is printed
}
Output: 0Hi22
```

8. (c)

a=0. b=0;

a=(a=4)||(b=1) //Assignment operator assigns and returns the assigned value. Here, short-circuiting will be applied. Since the logical operator is OR, if the first part is true, second part is not evaluated at all. Hence, b=0, a=1.

if(a && b)//The condition evaluates to 1 && 0 i.e. 0. Hence, else part is evaluated.

Output: PankajSharma0



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