

CS & IT ENGINEERING

Control Flow Statements

Programming in C



Switch statement


DPP 04 Discussion Notes



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TOPICS TO BE COVERED



01 Question

02 Discussion

Q.1

[NAT]



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

```
void main()
```

```
{
```

```
int i = 0;
```

```
switch(i)
```

```
{
```

```
case 0: i = i + 1;
```

```
case 1: i = i + 3;
```

```
case 2: i = i * 2;
```

```
break;
```

```
default: i = i + 5;
```

```
}
```

```
}
```

The value of i is 8.

$i \rightarrow 0+4+8$

Q.2

```
#include <stdio.h>
void main()
{
```

```
    int a, b, c, d, e;
```

```
    b = 1; c = 1; d = 2; e = -1;
```

```
    a = b++ && c-- || d++ && e--;
```

```
    switch(c)
```

```
    {
        case 0: a = a + 1;
```

```
        case 1: a = a - 1;
```

```
        default: a = a - 2;
```

```
    }
```

```
}
```

The final value of $(a + b + c + d + e)$ is 2.

[NAT]

a

2
1
-1

b

1
2

c

1
0

d

2

e

-1

$-1 + 2 + 0$

$+ 2 + (-1)$

$\Rightarrow 2$

$(b++ \&\& c--) || (d++ \&\& e--)$

$(1 \&\& 1)$

$1 || (d++ \&\& e--)$

$a = 1$

Q.3

```
#include <stdio.h>
int main(void)
```

```
{
    int x;
    scanf("%d", &x);
    switch(x)
    {
        case 0: x = x + 1;
        break;
        default: x = x - 1;
        case 1: x = x - 11;
        case 2: x = x + 128;
        break;
    }
    printf("%c", x);
    return 0;
}
```

☒ A.

p

☐ B.

M

☐ C.

Garbage

☐ D.

ERROR

x
-16 112
-4
-5

112 → ?

97 - a

~~98~~

~~99~~

~~100~~

~~101~~

~~102~~

~~103~~

~~104~~

~~105~~

~~106~~

~~107~~

~~108~~

~~109~~

~~110~~

~~111~~

~~112~~

p

What is the output when x = -4?



[MCQ]

Q.4

```
#include <stdio.h>
int main(void)
{
```

```
    int q, r = 0;
```

```
    q = 2 * 3/6 + 2.0/5 + 0.2 * 3;
```

```
    r = -q --;
```

```
    switch(q --)
```

```
    {
```

```
        case 0: printf("Hello");break;
```

```
        case 1: printf("Hi");break;
```

```
        case 2: printf("best hai");break;
```

```
        case 3: printf("GATE Wallah");
```

```
        default: printf("2023");
```

```
    }
```

```
    return 0;
```

```
}
```

The output of the program is GATE Wallah2023

$$\begin{array}{|c|} \hline x \\ \hline -2 \\ \hline \end{array}$$

$$a = 2 - 1 = 1$$

$$\begin{array}{l} x = -a; \\ a = a - 1; \end{array}$$

$$\begin{array}{l} 1 - (-2) \\ = 1 + 2 \\ = 3 \end{array}$$

A.

B.

C.

D.

$$2 \times 3/6 + 2.0/5 + 0.2 \times 3$$

[MCQ]

$$6/6 + 2.0/5 + 0.2 \times 3$$

Hibest haiGATE Wallah

① / x

② +

best haiGATE Wallah

GATE Wallah2023

GATE Wallah

$$\begin{array}{l} \text{float int} \\ 1 + 2.0/5 + 0.2 \times 3 \end{array}$$

$$1 + 0.4 + 0.2 \times 3$$

$$1 + 0.4 + 0.6$$

$$\begin{array}{l} 1.4 + 0.6 \\ q = 2.0 \end{array}$$



Q.5

```
#include<stdio.h>
int main()
{
    int j=10, p=0;
    for(;j>0;)
    {
        ① switch(j)
        {
            case 1: p+=3;
            case 2: p+=5;
            break;
            default: p-=8;
            case 3: p-=7;
            break;
        }
        ② j=j-3;
        ③ printf("%d\t",p);
    }
    return 0;
}
```

The output is-

for($j>0$;)

j $10 \ 7 \ 4 \ 1 \ -2$

p $0 \ -8 \ -15 \ -23 \ -30 \ -38 \ -42 \ -45$

j=10 \rightarrow (i) switch(10)

p = 0 - 8 = -8

j=7 \rightarrow (i) switch(7)

p = p - 8

= -15 - 8 = -23

j=4 \rightarrow (i) switch(4)

p = -30 - 8 = -38

p = -38 - 7 = -45

A. -15 -30 -42 -45

B. -15 -45 -30 -42

C. -15 -30 -42 -39

D. -15 -30 -45 -37

-15 -30 -45 -37
switch(1) =

[MCQ]



Q.6

#include<stdio.h>

int main()

{

int x;

for(x=0; x<32; x++)

{

① switch(x)

{

case 0: x= x+2;

case 1: x=x+5;

case 2: x=x+1;

default: x=x+7;

}

② printf("%d\t",x);

}

return 0;

}

The sum of the values printed is 69.

x 0 2 7 8 15 16 23 24 31 32

0/p: 15 23 31

[NAT]

switch(0) \Rightarrow x = x + 2

x = x + 5

x = x + 1

x = x + 7

switch(16) \Rightarrow default:

x = x + 7

switch(24) \Rightarrow x = x + 732 < 32 \Rightarrow false
$$\begin{array}{r} 15 \\ 23 \\ 31 \\ \hline 69 \end{array}$$


Q.7

Consider the following two statements:

P: Case label can be integer or character or floating point numbers.

Q: Only one default is allowed in switch-case structure.

Which of the following statements are INCORRECT?

[MCQ]

Incorrect

Correct

A. Both P and Q

C. only Q

☒ B. Only P

D. Neither P or Q.

Q.8

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

```
int main()
```

```
{
```

```
int x=4, y=5;
```

```
x=x==y==5;
```

```
switch(1)
```

```
{
```

```
x=x+11;
```

```
}
```

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

```
return 0;
```

```
}
```

The output is-

A.

0

B.

1

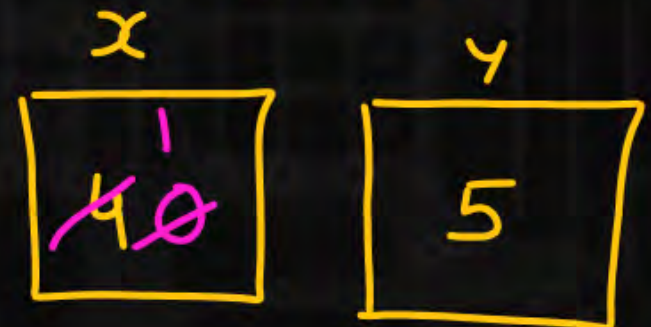
C.

11

D.

Compiler Error

[MCQ]



① == L to R
② ==

