

Programming in C

Chapter : Data Types and Operators

Topic : Data Types and operators

DPP-02

[MCQ]

```
1. include <stdio.h>
int main(void){
    int a;
    a = 2 * 6/5 + 3.0/2 + 1;
    printf("%d", a);
    return 0;
}
```

The value of a is ____

- (a) 4.9 (b) 4.0
(c) 4.5 (d) 4

[MCQ]

```
2. #include <stdio.h>
int main(void){
    int a;
    a = 16.0 /4 * 5 % 3;
    printf("%d", a);
    return 0;
}
```

The value of a printed is ____

- (a) Compiler error (b) 8.0
(c) 2 (d) 8

[NAT]

3. Consider the following program.

```
#include<stdio.h>
void main()
{
    int a;
    a=32>24>13>10>8>-1>0;
    printf("%d",a);
}
```

The output is .

[NAT]

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

```
a=25>15>0!=12<45>42!
= 65;
printf("%d",a);
}
```

The output is ____.

[MCQ]

5. Consider the following program:

```
#include<stdio.h>
void main()
{
    int a=0, b=1;
    a=(a=5)&&(b=0);
    printf("%d", a);
    printf("%d", b);
}
```

The output is:

- (a) 50 (b) 00
(c) 10 (d) Compiler error

[MCQ]

6. Consider the following statements:

P: The precedence of the modulus operator is higher than multiplication or division operator.

Q: The result of the modulus operator contains the sign of the second operand.

Which of the following statements is/are INCORRECT?

- (a) Only P
(b) Only Q
(c) Both P and Q
(d) Neither P nor Q

[MCQ]

7. Consider the following program:

```
#include<stdio.h>
void main()
{
    int a=2022;
```

```
printf("%d%d%d", a!=2024, a=2023, a==2021);  
}
```

The output is-

- (a) 020220 (b) 020231
(c) 002021 (d) 120230

[NAT]

8. Consider the following program:

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

```
void main()
```

```
{  
    int x=-2023;  
    printf("%d", ~(x=x+5));  
}
```

The output is _____.



Answer Key

1. (d)
2. (a)
3. (1)
4. (1)

5. (b)
6. (c)
7. (d)
8. (2017)



Hints and Solutions

1. (d)

$a = 12/5 + 3.0/2 + 1$
 $= 2 + 1.5 + 1$
 $= 4.5$
 a is an integer, so $a = 4$

I	op	I	=	I
I	op	F	=	F
F	op	I	=	F
F	op	F	=	F

2. (a)

$a = 16.0/4 * 5 \% 1$
 $= 4.0 * 5 \% 3$
 $= 20.0 \% 3$
 $= \text{ERROR}$

Modulus operator works only with integers.

3. (1)

$a = 32 > 24 > 13 > 10 > 8 > -1 > 0$
 $1 > 13 \Rightarrow 0 > 10$
 $0 > 8$
 $0 > -1$
 $1 > 0$
 1
 $a = 1$

4. (1)

$a = 25 > 15 > 0! = 12 < 45 > 42! = 65$
 $1 > 0$
 $1! = 12$
 $1 < 45$
 $1 > 42 \Rightarrow 0! = 65$
 1
 $a=1;$

Output: 1

5. (b)

`int a=0, b=1;`
`a=(a=5)&&(b=0);`
 // Assignment operator assigns and returns the assigned value. So, $a=5 \& \& 0=0$, $b=0$
`printf("%d", a);` // 0 is printed
`printf("%d", b);` // 0 is printed.

6. (c)

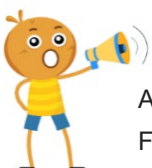
P: INCORRECT. The precedence of the modulus operator is same as multiplication or division operator.
 Q: INCORRECT. The result of the modulus operator contains the sign of the first operand.

7. (d)

$a=2022$. So, $a!=2024$ evaluates to 1.
 $a=2023$. Assignment operator assigns the value and returns the assigned value.
 $a==2021$ is equivalent to $2023==2021$. So, it evaluates to 0.
 Output: 120230

8. (2017)

$x=x+5 \rightarrow x=-2023+5=-2018$
 $\sim(x) \rightarrow \sim(-2018) = -(-2018+1) = 2017$.
 Output: 2017.



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