GATE

Computer Science & Information Technology

C - Programming

DPP: 3

Data Types & Operators

Q1 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

Q2 #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

mod works only with integer

Q3 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

Q4 #include<stdio.h>
void main()
{
int a;
a=25>15>0!=12<45>42!= 65;
printf("%d",a);
}
The output is _____.

Q5 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

Q6 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

Q7 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

Q8 Consider the following program:

```
#include<stdio.h>
void main()
{
   int x=-2023;
    printf("%d", (x=x+5)) ;
}
```

The output is _____.

GATE

Answer Key

Q1	(D)	Q5	(B)
Q2	(A)	Q6	(C)
Q3	1~1	Q7	(D)
Q4	1~1	Q8	2017~2017

Hints & Solutions

Q1 Text Solution:

a = 12/5 + 3.0/2 + 1

= 2 + 1.5 + 1

= 4.5

a is an integer, so a = 4

Q2 Text Solution:

a = 16.0/4 * 5 % 1

= 4.0 * 5 % 3

= 20.0 % 3

= Error

Modulus operator works only with integers.

Q3 Text Solution:

a = 32 > 24 > 13 > 10 > 8 > –1 > 0

1 > 13 Þ 0 > 10

0 > 8

0 > – 1

1 > 0

1

Q4 Text Solution:

a = 25 > 15 > 0! = 12 < 45 > 42! = 65

1 > 0

1! = 12

1 < 45

1 > 42 Þ 0! = 65

1

a = 1;

output : 1

Q5 Text Solution:

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.

Q6 Text Solution:

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.

Q7 Text Solution:

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

Q8 Text Solution:

x=x+5 → x=-2023+5=-2018

~(x) → ~(-2018) = -(-2018+1) = 2017.

Output: 2017.