Branch : CSE & IT Batch:Hinglish

WEEKLY TEST – 01
Subject : C Programming

Maximum Marks 20

Q.1 to 6 Carry ONE Mark Each

[MCQ]

1. #include <stdio.h>
int main(void){
float x;
x = 7*2.0/2+10/3;
printf("%f", x);
return 0;
}
The value of a is ___
(a) 10 (b) 10.0
(c) 10.33 (d) 11.0

[MCQ]

2. #include <stdio.h>
void main()
{
int a=0;
a=printf("Pankaj%dSharma",
printf("GATE Wallah"));
printf("%d", a);
}
What will be the output when you compile and run the above code?
(a) GATE Wallah10Pankaj14Sharma
(b) GATE WallahPankaj11Sharma13
(c) GATE WallahPankaj11Sharma14
(d) GATE WallahPankaj10Sharma13

[NAT]

3. Consider the following program.
#include<stdio.h>
void main()
{
int a;
a=21>24>17>-10<8>-1>-5!=0;
printf("%d",a);
}
The output is _____.

[MCQ]

4. #include < stdio.h>
void main()
{
int a = 2, b = –1, c = 0, d;
d = a -- || b ++ && c ++;
printf("%d%d%d%d", a, b, c, d);
}
The output string is-
(a) 1–101 (b) –1110
(c) 1–111 (d) 111–1

[NAT]

5. Consider the following program:
#include<stdio.h>
void main()
{
int x=-2024;
printf("%d", ~(x=x+5)) ;
printf("%d", ~(x+1));
}
The sum of the output values printed is _____.

[MCQ]

6. 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) 51
(c) 11 (d) 10

Q.7 to 13 Carry TWO Mark Each

[MCQ]

7. What will be the output of the C program?

```
#include<stdio.h>
int main()
{
    int a = 3, b = 3, c = 0, d = 1, m;
    m = a-- || b++ && c++ || d--;
    printf("%d %d %d %d %d", a, b, c, d, m);return 0;
}
```

(a) 2 3 1 1 1
(b) 4 4 1 4 1
(c) 4 4 1 4 0
(d) 2 3 0 1 1

[NAT]

8. Consider the following program.

```
#include<stdio.h>
void main()
{
    int a;
    a = printf("Pankaj Sharma") &&
    printf("Wallah") || printf("GATE");
    printf("%d", a);
}
```

The number of characters printed is _____.

[MCQ]

9. Consider the following program:

```
#include<stdio.h>
void main()
{
    int a=2023;
    printf("%d%d%d", a!=2024, a=2021, a==2021);
}
```

The output is-

(a) 120210
(b) 020211
(c) 120211
(d) 020231

[MSQ]

10. If the final value of a = 5, which of the following are invalid combinations?

```
a = p > q ? r < q ? p : q : r > q ? p : r
```

(a) p = 5, q = 10, r = 9
(b) p = 10, q = 5, r = 4
(c) p = 5, q = 9, r = 10
(d) p = 10, q = 9, r = 5

[MCQ]

11. Consider the following program.

```
#include <stdio.h>
int main()
{
   char ch=-143;
   printf("%c", ch);
   return 0;
}
```

The output is-

(a) w (b) q
(c) u (d) Garbage

[NAT]

12. Consider the following program.

```
#include <stdio.h>
int main()
{
   int c=32780;
   printf("%d", c);
   return 0;
}
```

(Assume the size of integer is specified as of 2 bytes.)
The output is _____.

[MSQ]

13. Which of the following are valid declarations?

(a) unsigned a;
(b) unsigned long a;
(c) unsigned long long int a;
(d) short a;

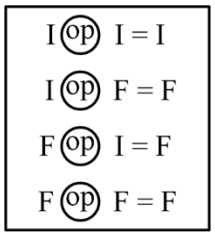
Answer Key

1. **(b)**
2. **(c)**
3. **(1)**
4. **(a)**
5. **(4035)**
6. **(c)**
7. **(d)**
8. **(20)**
9. **(a)**
10. **(a, b, d)**
11. **(b)**
12. **(-32756)**
13. **(a, b, c, d)**

Hints and Solutions

1. (b)

x = 7*2.0/2+10/3;
= 14.0/2 + 10/3
= 7.0+3
= 10.0
x is a float variable,
so, x = 10.0



2. (c)

int a=0;
a=printf("Pankaj%dSharma", printf("GATE Wallah"));
// printf prints and returns an integer equal to the number of characters printed. Inner printf is executed first here.
printf("%d", a);
Output: GATE WallahPankaj11Sharma14

3. (1)

a = 21>24>17>-10<8>-1>-5!=0
0 > 17 ⇒ 0 > -10
1 < 8
0 > – 1
1 > -5
1!=0
1
a = 1

4. (a)

d = a -- || b ++ && c ++;
d = a -- || (b ++ && c ++);
// post decrement is used, so the value used is a=2;
d = 2 || (b++ & c++);
↳ never evaluated
d = 1
but because of post decrement, a becomes 1.
Output: 1 -1 0 1

5. (4035)

x = x + 5 → x = –2024 + 5 = –2019
~(x) → ~(–2019) = – (–2019 + 1) = 2018
~(x + 1) → ~(–2019 + 1) = – (–2018 + 1) = 2017
Sum of the values printed = 2018 + 2017 = 4035.

6. (c)

int a=0, b=1;
a=(a=5)||(b=0);
// 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=1, a=1.
printf("%d", a);//1 is printed
printf("%d", b);//1 is printed.

7. (d)

m = a-- || b++ && c++ || d--
3 || (rest is not evaluated)
= 1
(d) 2 3 0 1 1 is correct

8. (20)

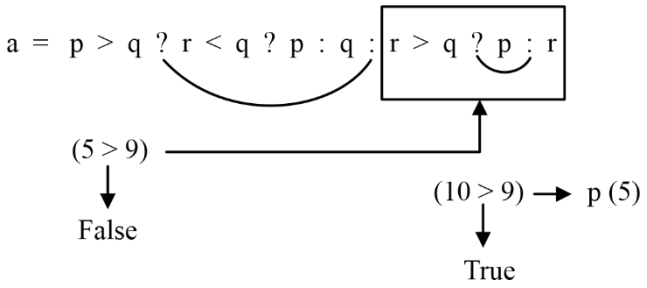
printf prints and returns an integer equal to the number of characters printed.
Due to short-circuiting, printf("GATE") is not executed. Since the logical operator is OR, if the first part is true, second part is not evaluated at all.
Output: Pankaj SharmaWallah1

9. (a)

The expressions are evaluated from right to left but are printed from left to right.
a= =2021 is equivalent to 2023= =2021. So, it evaluates to 0.
a=2021. Assignment operator assigns the value and returns the assigned value.
a=2021. So, a!=2024 evaluates to 1.
Output: 120210

10. (a, b, d)

The only valid combination is (c): p = 5, q = 9, r = 10



$\therefore$ a = 5

All other combinations are invalid.

11. (b)

Unsigned value for –143= 256 – 143 = 113.
Hence, 'q' is printed.

12. (–32756)

32780 is 13 steps ahead of 32767. After 32767, 13 steps are counted from –32768(including 32768) as
Printed value = –32756.

13. (a, b, c, d)

All are valid declarations.