Branch : CSE & IT Batch:Hinglish

WEEKLY TEST – 02
Subject : C Programming

Maximum Marks 20

Q.1 to 5 Carry ONE Marks Each

[MCQ]

1.
```
#include <stdio.h>

int main()

{

    int i=9;

    for(--i; i--; --i){

    printf("%d\t", i);

    if(i==1) break;

    }

    return 0;

}
```

The output is-

(a) 8 5 2 1 (a) 7 6 4 3 1

(c) 8 6 4 2 1 (d) 7 5 3 1

[MCQ]

2.
```
#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 + 99;
        break;
        case 2: x = x + 96;
        break;
    }
    printf("%c", x-32);
    return 0;
    }
```

When x=5, the character printed is-

(a) e (b) G

(c) Garbage value (d) E

[MCQ]

3.
```
#include <stdio.h>

int main()

{

    int a,i;

    a= 12.4/5+33.2/2*5-5;

    for(i=a; i<90;i=i+3)

    {

        printf("%c\t", i+32);

    }

    return 0;

}
```

The output is-

(a) p s v y (a) K L M N O

(c) k n q t w (d) P U V W

[MCQ]

4.
```
#include<stdio.h>

int main()

{

    int i=2023, j=2;
```

```
for(;j<i;j*=8)
{
    i+=1;
    printf("GATE Wallah 2023\n");
}
 return 0;

}
```

The number of times 'GATE Wallah 2023' is printed is-

(a) 3 (b) 2
(c) 4 (d) 5

[MCQ]

5.

```
#include<stdio.h>

void main()
{
int x=5;
if(printf("%d",x>>1)-3)
for(;x--;x--) break;
else;
printf("\t%d", x);
}
```

The output is-

(a) Compiler Error
(b) 1
(c) Infinite Loop
(d) 2 4

[MCQ]

6.

```
#include <stdio.h>

int main()

{

int a = 10 > 9 ? 0 ? 3 : -2 : 5;

if(a = a + 1)

printf("GATE 2023");

else

printf("GATE WALLAH");

return 0;

}
```

The output is-

(a) GATE 2023
(b) GATE WALLAH
(c) Compiler error
(d) Garbage value

Q.7 to 13 Carry TWO Marks Each

[NAT]

7. Consider the following program:

```
#include<stdio.h>

int main()

    {

       int p,j=0;

       for(p=2;p<=100 && j<3;p*=2){

        switch(p+j){

        case 1: p+=3;

        break;

        case 2: p+=5;

        break;

        case 3: p+=7;

        default: p+=8;

        break;

        }

        j++;

        printf("%d\n",p);

        }

     return 0;

    }
```

The sum of the values printed is _____

[NAT]

8.

```
#include <stdio.h>

int main()

{

    int i=printf("best hai GATE Wallah");
    while(i>=3){
```

```
    if(i%3!=0) i=i-5;
    else i=i+2;
    printf("Pankaj Sharma\n");
    }
    return 0;
}
```

The number of times printf() is executed is_____.

[MCQ]

9.
```
#include <stdio.h>

int main()

    {
      int i, j=4, k=3;
      i=j++<--k?++j:k--;
      for(++i; ++i; ++i){
      printf("%d\t", i);
      if(i>8) break;
    }
      return 0;

}
```

The output is-

(a) 2 4 6 8 (a) 4 6 8
(c) 4 6 8 10 (d) 2 4 6

[MCQ]

10.
```
#include<stdio.h>
int main()
    {
       int a=2, b=4;
      while(a++<=b--);
      printf("%d\t", a);
      printf("%d", b);
      return 0;
    }
```

The output is –

(a) 4 2 (b) 4 1
(c) 5 2 (d) 5 1

[NAT]

11.
```
#include<stdio.h>
int main()
  {
 int a=0, b=1;
while(++a<=5){
do{
      b+=2;
}while(b++<=10);
}
return 0;
}
```

The sum of the values of a and b is _____.

[MSQ]

12.
```
#include <stdio.h>

int main()
{
      int x=-5;
      do
      {
         printf("%d\t", ~(x+2));
         x++;
      }while(~(x+1)%2==0);
      printf("%d", x);
      return 0;
}
```

Which of the following values will be displayed in the output?

(a) 2 (b) 1
(c) –3 (d) – 4

[MSQ]

13.
```
#include <stdio.h>

int main()
{
      int i, n, count=0;
      for(i=1;i<=n;i=i*3)
      count=count+i;
      printf("%d", count);
      return 0;
}
```

Which of the following CANNOT represent the final value of the COUNT variable?

(a) 3^n (b) $\frac{n-1}{2}$

(c) $lon_3 n$ (d) $\log_3 \log_3 n$

Answer Key

1. **(d)**
2. **(b)**
3. **(a)**
4. **(c)**
5. **(d)**
6. **(a)**
7. **(81)**
8. **(12)**
9. **(c)**
10. **(d)**
11. **(31)**
12. **(a, b, c)**
13. **(a, b, c, d)**

Hint & Solutions

1. (d)

Sol. for (--i; i --; --i){

↓ ↓ ↓
8 8 6
6 4
4 2
2

printf("%d\t", i);//7 5 3 1
if(i==1) break; //Loop terminated

}

Output is : 7 5 3 1

2. (b)

Sol. When, x=5, default is executed. As no break statement is there after default, case 1 is also evaluated.

x=5-1=4
x=4+99=103

Printed character is the character with ASCII (103-32) i.e 71.

3. (a)

a = 12.4/5+33.2/2*5-5

a = 80.48

∵ a is integer

∴ a = 80

The for loop converts each character to lower case corresponding to the ASCII values.

Output ASCII : (80 + 32) (83 + 32) (86 + 32) (89+32)

Output characters : p s v y

4. (c)

Sol. for (j = 2; j < i ; j = j * 8)

2 < 2023 → true

i = 2024;
printf( ) → executed
j = 16

16 < 2024 → true
i = 2025;
printf( ) → executed
j = 128

128 < 2025 → true
i = 2026;
printf( ) → executed
j = 1024

1024 < 2026 → true
i = 2027;
printf( ) → executed
j = 8192

8192 < 2027 → false; //Loop terminated.

5. (d)

Sol. x=5

if(printf("%d",x>>1)-3)
5>>1= 2
printf() prints and returns the number of characters it successfully printed. 2 is printed and printf() returns 1.
Condition is evaluated as-(1-3) = -2 i.e. TRUE.
for(;x--;x--) break; is evaluated.

↓
5

Condition is True. x is decremented to 4. Then break is executed.
printf("\t%d", x); //4 is printed.

Output: 2 4

6. (a)

Sol. a = 10 > 9 ? 0 ? 3 : -2 : 5;

10>9 is TRUE and 0 is False, so a=-2

Now the assignment operator assigns and returns the value. So, a=-2+1=-1; Hence, condition becomes true, "GATE 2023" is printed.

7. (81)

Sol. P [7 7 14 22 44 52] 104 j [0 1 2] 3

switch (2 + 0) –
case 2: ✓ p + = 5
p = 7 * 2 = 14 → 7 is printed
switch (14 + 1) –
default: ✓ p += 8 → 22 printed

p = 22 * 2 = 44

switch (44 + 2) –

default: ✓ p += 8 → 52 is printed

52 * 2 = 104

104 < = 100 → false

∴ sum of printed values = 7 + 22 + 52 = 81

8. (12)

Sol. printf() prints and returns the number of characters it printed. "best hai GATE Wallah" is printed.

i=20;

The iteration while() executes for i=20, 15, 17, 12, 14, 9, 11, 6, 8, 3, 5.

"Pankaj Sharma" is executed for the above 11 values of i.

The number of times printf() executed is 12.

9. (c)

Sol. i=j++<--k?++j:k--; //4<2-> TRUE, so, k—is evaluated. i takes the value 2.

i = 2, k=1, j=5;

for (++i; ++i; ++i)

{

↓↓↓

34 5

6 7

8 9

10

printf ("%d\t", i); // 4 6 8 10

if(i > 8) break;

10 > 8 → break

}

Output: 4 6 8 10

10. (d)

Sol.

a | ~~1~~ ~~3~~ ~~4~~ 5 | b | ~~4~~ ~~3~~ ~~2~~ 1 |

while (a++ < = b – –);

2 < = 4 → True

3 < = 3 → True

4 < = 2 → True

∴ Post – decrement / increment operator assigns and then decrements / increments.

∴ a | 5 | b | 1 |

∴ Output is : 5 1

11. (31)

a | ~~0~~ ~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ 6 |

b | ~~1~~ ~~3~~ ~~4~~ ~~6~~ ~~7~~ ~~9~~ ~~10~~ ~~12~~ ~~13~~ ~~15~~ ~~16~~ ~~18~~ ~~19~~ ~~21~~ ~~22~~ ~~24~~ ~~25~~ |

while (++a < = 5)

{

do {

1 < = 5 → True
2 < = 5 → True
3 < = 5 → True
4 < = 5 → True
5 < = 5 → True
6 < = 5 → False

b = b + 2;

1 + 2 → 3 10 + 2 → 12 19 + 2 = 21

4 + 2 → 6 13 + 2 → 15 22 + 2 = 24

7 + 2 → 9 16 + 2 → 18

}

while (b ++ < = 10);

3 < = 10 → true

6 < = 10 → true

9 < = 10 → true

12 < = 10 → False

15 < = 10 → False

18 < = 10 → False

21 < = 10 → False

24 < = 10 → False

Final value –

∴ a | 6 | b | 25 |

Sum = a + b = 6 + 25 = 31

12. (a, b, c)

~(x+2) i.e -(-5+2+1)=2 is printed.

x++; //x=-4

~(x+1)=2. (~(x+1)%2==0) condition becomes TRUE.

~(x+2) i.e -(-4+2+1)=1 is printed.

x++; //x=-3

~(x+1)=1. (~(x+1)%2==0) condition becomes FALSE.

Loop terminates.
printf("%d", x);//-3 is printed.

Output: 2 1 -3

13. (a, b, c, d)
None of the options are correct.

❑❑❑