

NPTEL ASSIGNMENT -

Problem Solving Through Programming In C

WEEK 5 – MCQ QUIZ

Week 5 : Assignment 5

The due date for submitting this assignment has passed.

Due on 2023-08-30, 23:59 IST.

Assignment submitted on 2023-08-30, 18:53 IST

1) The statement that transfers control to the beginning of the loop is called

1 point

- ☐ a) break
- ☒ b) continue
- ☐ c) goto
- ☐ d) None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) continue

2) In C three way transfer of control is possible using

1 point

- ☐ a) Unary operator
- ☐ b) Logical operator
- ☒ c) Ternary operator
- ☐ d) None

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) Ternary operator

3) What is the output of the following code?

1 point

```
#include <stdio.h>
int main()
{
    int i=0;
    do
    {
        printf("while vs do-while\n");
    }while(i==0);
    printf("Out of loop");
    return 0;
}
```

- ☐ a) 'while vs do-while' once
- ☐ b) 'Out of loop' infinite times
- ☐ c) Both 'while vs do-while' and 'Out of loop' once
- ☒ d) 'while vs do-while' infinite times

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) 'while vs do-while' infinite times

4) What is the output of the following C program?

1 point

```
#include <stdio.h>
int main()
{
    int a = 0, i;
    for (i = 0; i < 5; i+=0.5)
    {
        a++;
        continue;
    }
    printf("%d", a);
    return 0;
}
```

- ☐ a) 5
☐ b) 10
☒ c) No output
☐ d) Compilation error

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) No output

5) What is the output of the following C code?

1 point

```
#include <stdio.h>
int main()
{
    int a = 1;
    if (a--)
        printf("True\n");
    if (++a)
        printf("False\n");
    return 0;
}
```

- ☐ a) True
☐ b) False
☒ c) Both 'True' and 'False'
☐ d) Compilation error

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) Both 'True' and 'False'

6) What will be the output?

1 point

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

```

int x=1;
do
{
    continue;
    printf("%d", x);
    x++;
    break;
}while(x<=10);
printf("\nAfter loop x=%d", x);
printf("\n");
return 0;
}

```

- ☐ a) After loop x=1
☐ b) 1
 After loop x=2
☐ c) 1 2 3 4 5 6 7 8 9 10
☒ d) No output

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) No output

7)

1 point

What will be the output?

```

#include <stdio.h>
int main()
{
    float k = 0;
    for (k = 0.5; k < 3; k++)
        printf("I love C\n");
    return 0;
}

```

- ☐ a) Error
☒ b) I love C - will be printed 3 times
☐ c) I love C - will be printed 6 times
☐ d) I love C - will be printed 5 times

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) I love C - will be printed 3 times

8)

1 point

What will be the output?

```

#include <stdio.h>
int main()
{
    int x;
    x = 4 < 8 ? 5 != 1 < 5 == 0 ? 1 : 2 : 3;
    printf("%d", x);
    return 0;
}

```

- ☐ a) 1
☒ b) 2
☐ c) 3
☐ d) Error

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) 2

9)

1 point

The following program is used to find the reverse of a number using C language. Find the missing condition inside while statement (indicated as 'xxxx').

```
#include <stdio.h>
int main()
{
    int n, reversedNumber = 0, remainder;

    printf("Enter an integer: ");
    scanf("%d", &n);

    while(xxxx)
    {
        remainder = n%10;
        reversedNumber = reversedNumber*10 + remainder;
        n /= 10;
    }

    printf("Reversed Number = %d", reversedNumber);

    return 0;
}
```

- ☒ a) n!=0
- ☐ b) n==0
- ☐ c) n%10==0
- ☐ d) n/10==0

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) n!=0

10)

1 point

Compute the printed value of i & j of the C program given below

```
#include <stdio.h>
int main()
{
    int i = 0, j = 15;
    while (i<8, j >9)
    {
        i++;
        j--;
    }
    printf("%d, %d\n", i, j);
    return 0;
}
```

- ☐ a) 8,10
- ☐ b) 8,9
- ☒ c) 6, 9
- ☐ d) 7, 10

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) 6, 9

WEEK 5 – PROGRAMMING ASSIGNMENT

Week 5 : Programming Assignment 1

Due on 2023-08-31, 23:59 IST

Write a C program to check whether a given number (N) is a perfect number or not.

[Perfect Number - A perfect number is a positive integer number which is equals to the sum of its proper positive divisors. For example 6 is a perfect number because its proper divisors are 1, 2, 3 and it's sum is equals to 6.]

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	8128	8128 is a perfect number.	8128 is a perfect number.	Passed
Test Case 2	8000	8000 is not a perfect number.	8000 is not a perfect number.	Passed

The due date for submitting this assignment has passed.

2 out of 2 tests passed.

You scored 100.0/100.

Assignment submitted on 2023-08-31, 22:28 IST

Your last recorded submission was :

```

1 #include <stdio.h>
2 int main()
3 {
4     int N;
5     scanf("%d",&N); /* An integer number taken as input from test cases */
6
7     /*Complete the program by writing the rest of the code in the space provided.
8     Copy and paste the printf statement given below wherever required to avoid errors.
9     printf("\n%d is a perfect number.",N);
10    printf("\n%d is not a perfect number.",N);
11    */
12    int sum=0;
13    for(int i = 1; i <= N / 2; i++)
14    {
15        if(N % i == 0)
16        {
17            sum += i;
18        }
19    }
20    if(sum == N){
21        printf("%d is a perfect number.", N);
22    }
23    else{
24        printf("%d is not a perfect number.", N);
25    }
26    return 0;
27 }

```

Week 5 : Programming Assignment 2

Due on 2023-08-31, 23:59 IST

Write a C program to count total number of digits of an Integer number (N).

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	45667	The number 45667 contains 5 digits.	The number 45667 contains 5 digits.	Passed
Test Case 2	87	The number 87 contains 2 digits.	The number 87 contains 2 digits.	Passed

The due date for submitting this assignment has passed.

2 out of 2 tests passed.

You scored 100.0/100.

Assignment submitted on 2023-08-31, 22:29 IST

Your last recorded submission was :

```

1 #include <stdio.h>
2 int main()
3 {
4     int N;
5     scanf("%d",&N); /*The number is accepted from the test case data*/
6
7     /* Complete the rest of the code. Please use the printf statements as below
8     by just changing the variables used in your program
9
10    printf("The number %d contains %d digits.",N,count);
11    */
12    int temp, count;
13    count=0;
14    temp=N;
15    while(temp>0)
16    {
17        count++;
18        temp/=10;
19    }
20    printf("The number %d contains %d digits.",N,count);
21 }

```

Week 5 : Programming Assignment 3

Due on 2023-08-31, 23:59 IST

Write a C program to check whether the given number(N) can be expressed as Power of Two (2) or not.
For example 8 can be expressed as 2^3 .

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	256	256 is a number that can be expressed as power of 2.	256 is a number that can be expressed as power of 2.	Passed
Test Case 2	800	800 cannot be expressed as power of 2.	800 cannot be expressed as power of 2.	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-08-31, 22:56 IST

Your last recorded submission was :

```

1 #include <stdio.h>
2 int main()
3 {
4     int N;
5     scanf("%d",&N); /* The value of N is taken from the test case data */
6
7     /* Complete the code.
8     Use the printf statements as below
9     printf("%d is a number that can be expressed as power of 2.",N);
10    printf("%d cannot be expressed as power of 2.",N);
11    */
12    int temp, flag;
13    temp=N;
14    flag=0;
15
16    while(temp!=1)
17    {
18        if(temp%2!=0){
19            flag=1;
20            break;
21        }
22        temp=temp/2;
23    }
24
25    if(flag==0)
26        printf("%d is a number that can be expressed as power of 2.",N);
27    else
28        printf("%d cannot be expressed as power of 2.",N);
29 }
```

Week 5 : Programming Assignment 4

Due on 2023-08-31, 23:59 IST

Write a C program to find sum of following series where the value of N is taken as input

$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \dots \frac{1}{N}$$

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	100	Sum of the series is: 5.19	Sum of the series is: 5.19	Passed
Test Case 2	20	Sum of the series is: 3.60	Sum of the series is: 3.60	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-08-31, 22:30 IST

Your last recorded submission was :

```

1 #include<stdio.h>
2 int main()
3 {
4     int N;
5     float sum = 0.0;
6     scanf("%d",&N); /*Read the value of N from test cases provided*/
7
8     /* Complete the program. Please use the printf statement given below:
9
10    printf("Sum of the series is: %.2f\n",sum);
11
12    */
13
14    int i;
15    for(i=1;i<=N;i++)
16    {
17        sum = sum + ((float)1/(float)i);
18    }
19    printf("Sum of the series is: %.2f",sum);
20 }
```