**Programming & OOP concept**

**Assignment-1**

1.Write a pseudocode to determine whether a person is eligible to vote or not given his/her age. The voting eligibility criteria is that the person’s age must be >= 18.

**Pseudocode:**

Begin

Int age

Display “Enter the age:”

if(age>=18)

Display “Person is eligible to vote”

else

Display “person is not eligible to vote”

End

**Algorithm:**

Step-1: Start

Step-2: Declare variable age.

Step-3: Read variable age.

Step-4: if(age>=18)

Display “Person is eligible to vote”

Else

Display “Person is not eligible to vote”

Step-5: Stop

2Q) Write an algorithm to determine whether a number is a prime number or not.

**Pseudocode:**

Begin

Declare variable n,i,flag

Display “Enter a number”

Initialize flag=1, i=2

If(n<=1)

Display “n is not a prime number”

Else if (i<[(n/2) + 1])

Remainder =0 when n divided by i

Set flag=0

i=i+1

if(flag!=0)

Display “n is prime number”

Else

Display “n is not a prime number”

End

**Algorithm:**

Step-1: Start

Step-2: Declare variables n,i,flag

Step-3: initialize variables flag=1,i=2

Step-3: read n

Step-4: if(n<=1)

Display “n is not a prime number”.

Go to step-7 .

Step-5: if( [i<(n/2) +1])

Remainder equals to 0(n divide i)

Set flag=0

i=i+1

Step-6: if(flag!=0)

Display “n is a prime number”

Else

Display “n is not a prime number”

Step-7: Stop

3Q) Write a pseudocode to reverse the digits of a number.

**Pseudocode:**

Begin

Declare n

Display “Enter a number : n”

reverse=0

begin while(n>0)

reminder=n%10

reverse =(reverse\*10) +remainder

n=n

end while

Display “Reverse of number n:”

end

**Algorithm:**

Step-1: Start

Step-2: Declare a variable n

Step-3: Read n.

Step-4: Start while loop where n greater than 0

While(n>0)

remainder=n% 10

reverse=(reverse\*10) +remainder

n=n

Step-5: Display reverse of a number

Step-6: Stop

4Q) Write an algorithm to find the factorial of a given number.

**Pseudocode:**

Begin

Declare number n

if(i<=n)

calculate fact=fact\*i

i=i+1

display factorial

end

**Algorithm:**

Step-1: Start

Step-2: Read a number n

Step-3: if(i<=n) go to step-4 otherwise go to step-

Step-4: Calculate fact=fact\*i

Step-5: Increment i by 1(i=i+1)

Step-6: Display Fact

Step-7: Stop

5Q) Write a pseudocode to count the number of vowels in the string **CITIUSTECH.**

**Pseudocode:**

Begin

Initialize vowel is equal to "aeiou AEIOU"

Assign String is equal to CITIUSTECH

Initialize count is equal to zero

Check any vowel is present in String

If yes increment count

Print count which is the total number of vowels in String

End

**Algorithm:**

Step-1: Start

Step-2: Initialize the vowel

Step-3: Declare the string CITIUSTECH

Step-4: Using if condition check for the vowels

Step-5: If vowel is found increment count

Count++ ;

Step-6: Display the count of vowels

Step-7: Stop