**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.**

Ans: Start.

number age (int age).

Display Enter the age =

if age >=18

display ‘Eligible to vote’.

Else

Display ‘not eligible to vote’.

Finish.

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

Ans: 1. Start.

2. Take the variables i, n, temp=0.

3. Take the input from the user ‘n’.

4. Use condition to check if n == 0 or n== 1.

5. Put flag=1 for above condition.

6. Now use the for loop until the condition is true put i= 2; i<=n/2; i++.

7. Use if condition again to check whether the number is divisible by any other number apart from it self and 1, hence n / i== 0 and put the flag as 1.

8. Now put the flag 0 for prime number.

9. Hence use the condition if flag==0, display the number is prime.

10. Else display the number is not prime.

**3.Write a pseudocode to reverse the digits of a number.**

Ans: Start

Integer n, reverse=0, remainder.

Display Enter the number n.

Input n.

WHILE n! =0

remainder = n % 10

reverse = reverse \* 10 + remainder

n = n / 10

Display “reverse number is” reverse

END

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

Ans: Start.

1. Take integer number as n, i.

2. Take input as a number n

3. Check the condition if n is given as 0 or 1 print factorial is equal to 1.

4. Now in else condition do the iteration using for loop for given number.

5. Using the iterating values calculate the factorial use n=n\*i.

6. display factorial value.

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

Ans: BEGIN

STRING word[10]

NUMBER count=0, i

STRING word= “CITIUSTECH”

WHILE(word[i]!=null)

BEGIN

IF((word[i] == ‘A’ | | word[i] == ‘E’ | | word[i] == ‘I’ | | word[i] == ‘O’ | | word[i] == ‘U’) | |

word[i] == ‘a’ | | word[i] == ‘e’ | | word[i] == ‘I’ | | word[i] == ‘o’ | | word[i] == ‘u’ ))

++count

END

**6.Write an algorithm for each pseudocode written in assignment 1, 3 and 5.**

Ans:

**6.1** **Eligible to vote:**

1. Start.

2. Take the integer age as input.

3. Put the condition if age is greater than 18, display you are eligible to vote.

4. Else display you are not eligible to vote.

5. End.

**6.3 Reverse the digits of numbers:**

1. Start.

2. Declare the variables.

3. Use the while loop for the validation of the number.

4. Use the logic,

Reverse= Reverse \* 10 +Remainder

n= n /10

5. Display the reverse number.

6. End.

**6.5 Number of vowels in the string:**

1. Start.

2. declare vowels = “aAeEiIoOuU”, data = “CITIUSTECH” of type STRING and count =0, iterator of type int.

3. apply for the iterator in data

3.1 Start

3.2 apply condition if (iterator in vowels)

3.3 increment count

* 1. stop

**7.Write a pseudocode for each algorithm written in assignment 2 and 4.**

Ans:

**7.2 Prime number:**

BEGIN

NUMBER n, i, flag=0

Display Enter the number

FOR i=2; i<=n/2; ++i

IF n % i == 0

FLAG = 1

BREAK

IF

FLAG == 0

Display it’s a prime number.

ELSE

Display it’s not a prime number.

RETURN 0

**7.4 Factorial of a number:**

BEGIN

NUMBER fact, number, i

DISPLAY Enter the positive integer

INPUT number

IF number = 0 OR number =1

DISPLAY factorial is 1

ELSE

FOR i =0 ; i <=number ; i++

fact= fact \* i

DISPLAY factorial of the number

END