LAB EXERCISE – 4

(1)//Program to check valid strings for the Regular Expression $C(A + B)^+$

```
#include <iostream>
using namespace std;
// Function to find whether the given
// string is Accepted by the DFA
void DFA(string str, int N)
{
        // If n <= 1, then print No
        if (N <= 1) {
                cout << "No";
                return;
        }
        // To count the matched characters
        int count = 0;
        // Check if the first character is C
        if (str[0] == 'C') {
                count++;
                // Traverse the rest of string
                for (int i = 1; i < N; i++) {

                        // If character is A or B,
                        // increment count by 1
```

```
                    if (str[i] == 'A' || str[i] == 'B')
                        count++;
                    else
                        break;
                }
            }
            else {
                // If the first character
                // is not C, print -1
                cout << "No";
                return;
            }
            // If all characters matches
            if (count == N)
                cout << "Yes";
            else
                cout << "No";
}
int main()
{
            string str = "CAABBAAB";
            int N = str.size();
            DFA(str, N);
```

```
        return 0;
}
```

(2)//Program to check valid strings for FA with language L = {a^N | N ≥ 1}

```
#include<iostream>
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#include<string.h>
using namespace std;
int main() {
  char S[30];
  int l,i;
  int count = 0;
  cout << "Enter input string:";
  scanf("%s",S);
  l=strlen(S);
  for (i=0;i<l;i++) {
    if(S[i]!='a') {
      cout << "Entered string is NOT ACCEPTED";
      getch();
      exit(0);
    }
    if (S[i] == 'a')
```

```
        count++;
      else
        cout << "Invalid input";
    }
    if (count == l && count != 0) {
      cout << "Entered string is accepted";
    }
    return 0;
}
```