DS LAB PROGRAM 2

2.

```c
#include<stdio.h>
#include<string.h>
int F(char symbol)
{
    switch(symbol)
    {
      case '+':
      case '-':return 2;
      case '*':
      case '/':return 4;
      case '^':
      case '$':return 5;
      case '(':return 0;
      case '#': return -1;
      default : return 8;
    }
}
int G(char symbol)
{
    switch(symbol)
    {
    case '+':
    case '-':return 1;
    case '*':
    case '/':return 3;
    case '^':
    case '&':return 6;
    case '(':return 9;
    case ')':return 0;
    default:return 7;
    }
}
void infix_postfix(char infix[],char postfix[])
{
    int top,j,i;
    char s[30],symbol;
    top=-1;
    s[++top]='#';
    j=0;
    for(i=0;i<strlen(infix);i++)
    {
```

```c
            symbol=infix[i];
            while(F(s[top])>G(symbol))
            {
              postfix[j]=s[top--];
              j++;
            }
            if(F(s[top])!=G(symbol))
            s[++top]=symbol;
            else
            top--;
          }
          while(s[top]!='#')
          {
            postfix[j++]=s[top--];
          }
          postfix[j]='\0';
}
void main()
{
    char infix[20];
    char postfix[20];
    printf("Enter the valid infix expression\n");
    scanf("%s",infix);
    infix_postfix(infix,postfix);
    printf("The postfix expression is\n");
    printf("%s\n",postfix);
}
```
OUTPUT:-

```
1  #include<stdio.h>
2  #include<string.h>
3  int F(char symbol)
4  {
5      switch(symbol)
```

input

Enter the valid infix expression
a+b*(c^d-e)^(f+g*h)-i
The postfix expression is
abcd^e-fgh*+^*+i-

...Program finished with exit code 0
Press ENTER to exit console.