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**Sec- I**

**DSA in C**

**Lab Program 2: program to convert a given valid arithmetic expression to Postfix expression**

**Code:**

#include <stdio.h>

char stack[100];

int top = -1;

void push(char c) {

stack[++top] = c;

}

char pop() {

if (top == -1) return '\0';

return stack[top--];

}

int precedence(char c) {

if (c == '+' || c == '-') return 1;

if (c == '\*' || c == '/') return 2;

return 0;

}

int main() {

char in[100], out[100];

int k = 0;

printf("Enter Infix: ");

scanf("%s", in);

for (int i = 0; in[i] != '\0'; i++) {

char c = in[i];

if ((c >= 'A' && c <= 'Z') || (c >= 'a' && c <= 'z')) {

out[k++] = c;

}

else if (c == '(') {

push(c);

}

else if (c == ')') {

while (top != -1 && stack[top] != '(') {

out[k++] = pop();

}

if (top != -1 && stack[top] == '(') {

pop();

}

}

else {

while (top != -1 && precedence(stack[top]) >= precedence(c)) {

out[k++] = pop();

}

push(c);

}

}

while (top != -1) {

out[k++] = pop();

}

out[k] = '\0';

printf("Postfix: %s\n", out);

return 0;

}

**Expected Output:**

Enter Infix: A+B\*C-D/E\*H

Postfix: ABC\*+DE/H\*-



