Q.) WRITE A-C PROGRAM TO CONVERT INFIX EXPRESSION TO POSTFIX EXPRESSION

A.) (i) <u>CODE:-</u>

```c
#include<stdio.h>
#include<string.h>

char stack[200];
int top = -1;

void push(char a)
{
    stack[++top] = a;
}

char pop()
{
    if(top == -1)
        return -1;
    else
        return stack[top--];
}

int priority(char b)
{
    if(b == '(')
        return 0;
    if(b == '+' || b == '-')
        return 1;
    if(b == '*' || b == '/')
        return 2;
    return 0;
}

int main()
{
    char exp[100];
    char *c, d;
    printf("PROGRAM TO CHANGE INFIX EXPRESSION TO POSTFIX EXPRESSION \n");
    printf("Enter THE INFIX EXPRESSION = ");
    scanf("%s",exp);
    printf("THE POSTFIX EXPRESSION = ");
    c = exp;
```

```c
    while(*c != '\0')
    {
        if(isalnum(*c))
            printf("%c ",*c);
        else if(*c == '(')
            push(*c);
        else if(*c == ')')
        {
            while((d = pop()) != '(')
                printf("%c ", d);
        }
        else
        {
            while(priority(stack[top]) >= priority(*c))
                printf("%c ",pop());
            push(*c);
        }
        c++;
    }

    while(top != -1)
    {
        printf("%c ",pop());
    }return 0;
}
```

(ii)SAMPLE INPUT:-

```
PROGRAM TO CHANGE INFIX EXPRESSION TO POSTFIX EXPRESSION
Enter THE INFIX EXPRESSION = a+b*c
```

(iii)SAMPLE OUTPUT:-

```
THE POSTFIX EXPRESSION = a b c * +
```