Ans to the question no 01

#define size 100

int stack[size];

int top=-1;

void push(int value)

{

top++;

stack[top]=value;

}

int pop()

{

int a;

a=stack[top];

top--;

return a;

}

int is\_operand(char ch)

{

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

return 1;

else return 0;

}

int main()

{

char postfix[size],ch;

int i=0,op1,op2,result,m;

printf("Enter a postfix expression\n");

gets(postfix);

while(postfix[i]!='\0')

{

ch=postfix[i];

if(is\_operand(ch)==1)

{

printf("Enter the value of %c:",ch);

scanf("%d",&m);

push(m);

}

else

{

op2=pop();

op1=pop();

switch(ch)

{

case '+' : result=op1+op2;

push(result);

break;

case '-' :result=op1-op2;

push(result);

break;

case'\*' : result=op1\*op2;

push(result);

break;

case '/' : result= op1/op2;

push(result);

break;

}

}

i++;

}

result=pop();

printf("The result is %d",result);

}

Ans to the ques no 02

#define size 100

char stack[size];

int top=-1;

void push(char item)

{

if (top>= size-1)

printf ("stack overflow,push not possible\n ");

else {

top++;

stack[top] = item;

}

}

char pop()

{

char item;

item=stack[top];

top--;

return item;

}

int is\_operator(char symbol)

{

if (symbol=='^'|| symbol=='\*'||symbol=='/'||symbol=='+'||symbol=='-')

return 1;

else return 0;

}

int precedence(char symbol)

{

if (symbol =='^')

return 2;

else if (symbol=='\*'||symbol =='/')

return 2;

else if (symbol=='+'||symbol=="-")

return 1;

else

return 0;

}

int main()

{

char infix[size],postfix[size],item,temp;

int i=0,j=0;

printf("Enter the arithmetic notation in infix notation");

gets(infix);

while (infix[i]!='\0')

{

item = infix[i];

if(item=='(')

{

push (item);

}

else if (item >='A'&&item<='z'|| item>='a'&&item<='z')

{

postfix[j]=item;

j++;

}

else if (is\_operator(item) ==1)

{

temp=pop();

while (is\_operator(temp) ==1&& precedence(temp) >= precedence(item))

{

postfix[j]=temp;

j++;

temp =pop();

}

push(temp);

push(item);

}

else if (item ==')')

{

temp=pop();

while (temp !='(')

{

postfix[j]=temp;

j++;

temp=pop();

}

}

else {

printf ("invalid arithmetic expression\n");

getch();

exit(0);

}

i++;

}

while( top>-1)

{

postfix[j]= pop();

j++;

}

postfix[j]='\0';

printf("\n Arithmetic notation in postfix Expression is : ");

puts(postfix);

}