

1) Infix to postfix:

Infix expression: $A * (B * C + D * E) + F$:

Sno	current Token	operator stack	postfix string
1.	A		A
2.	*	*	A
3.	(	* (	A
4.	B	* (	AB
5.	*	* (*	AB
6.	C	* (*	ABC
7.	+	* (+	ABC *
8.	D	* (+	ABC * D
9.	*	* (+ *	ABC * D
10.	E	* (+ *	ABC * DE
11.	)	*	ABC * DE * +
12.	+	+	ABC * DE * + *
13.	F	+	ABC * DE * + * F
14.			ABC * DE * + * F +

postfix expression: $ABC * DE * + * F +$


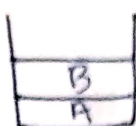
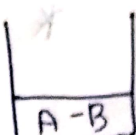
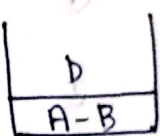
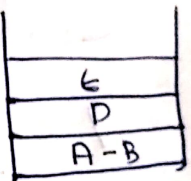
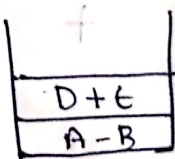
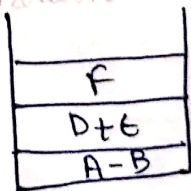
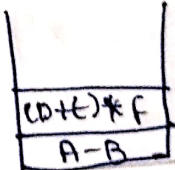
2) Infix Expression : $A * B^{\wedge} C + D$

S. NO	current Token	operator stack	post fix string
1.	A		A
2.	*	*	A
3.	B	*	AB
4.	\wedge	* \wedge	AB
5.	C	* \wedge	ABC
6.	+	+	ABC \wedge *
7.	D	+	ABC \wedge * D
8.		+	ABC \wedge * D +

post fix Expression : $* + ABC^{\wedge} * D +$

3) postfix to infix

postfix expression : $AB-DE+EF*/$

S.No	Reading of postfix	Stack top	Expression
1.	A	A	
2.	B	B	
3.	-	A-B	
4.	D	D	
5.	E	E	
6.	+	D+E	
7.	F	F	
8.	*	$(D+E)*F$	
9.	/	$(A-B)/(D+E)*F)$	

Infix expression : $(A-B)/(D+E)*F)$

Postfix conversion: $abc * de - / +$

S.No	Symbol	Stack
1.	a	a
2.	b	ab
3.	c	abc
4.	*	$a(b*c)$
5.	d	$a(b*c)d$
6.	e	$a(b*c)de$
7.	-	$a(b*c)(d-e)$
8.	/	$a(b*c)/(d-e)$
9.	+	$(a+(b*c)/(d-e))$

Infix conversion: $(a+(b*c)/(d-e))$

5) Balanced symbols:

$$((a+b) * (c-d))$$

S.No	Symbol	Stack	Action Taken	Expression So far
1.	(	(	push '('	(
2.	(	((	push '('	((
3.	a	((	Append 'a'	((a
4.	+	((	Append '+'	((a+
5.	b	((	Append 'b'	((a+b
6.	)	(*	POP '('	((a+b) *
7.	*	(*	push '*'	((a+b) * (
8.	(	(* (	push '('	((a+b) * ((
9.	c	(* (	Append 'c'	((a+b) * (c-
10.	-	(* (	Append '-'	((a+b) * (c-d
11.	d	(* (	Append 'd'	((a+b) * (c-d)
12.	)	(*	POP '('	((a+b) * (c-d)
13.	)		POP '('	((a+b) * (c-d))

It is valid for 'Balanced symbol'.

6) $\{ (a+b) * c \} - d$

S.No	Symbol	Stack	Action Taken	Expression so far
1.	(	[( ]	push '('	(
2.	a	[(]	Append 'a'	(a
3.	+	[(, +]	push '+'	(a +
4.	b	[(, +]	Append 'b'	(a + b
5.	)	[(, +, *)]	pop '('	(a + b)
6.	*	[(, *)]	push '*'	(a + b) *
7.	(	[( ]	Append '('	(a + b) * (
8.	)	[(, -)]	pop '('	(a + b) * (
9.	-	[(, -)]	push '-'	(a + b) * (-
10.	d	[]	Append 'd'	(a + b) * (- d
11.	End		pop remaining operators	(a + b) * (- d

It is valid for "Balanced Symbol"