

## Hw4-Part1

1-)  $A + ((B - C * D) / E) + F - G / H$

**Solution:**

**a)Postfix:**

Sr. no.	Expression	Stack	Postfix
0	A	(	A
1	+	(+	A
2	(	(+(	A
3	(	(+((	A
4	B	(+((	AB
5	-	(+((-	AB
6	C	(+((-	ABC
7	*	(+((-*	ABC
8	D	(+((-*	ABCD
9	)	(+(	ABCD*-
10	/	(+(/	ABCD*-
11	E	(+(/	ABCD*-E
12	)	(+	ABCD*-E/
13	+	(++	ABCD*-E/
14	F	(++	ABCD*-E/F
15	-	(-	ABCD*-E/F++
16	G	(-	ABCD*-E/F++G
17	/	(-/	ABCD*-E/F++G
18	H	(-/	ABCD*-E/F++GH
19	)		ABCD*-E/F++GH/-

**RESULT:** ***ABCD\*-E/+F+GH/-***

b)Prefix:

Reversed string: H/G-F+(E/(D\*C-B))+A

Postfix Table For: H/G-F+(E/(D\*C-B))+A

Sr. no.	Expression	Stack	Prefix
0	H	(	H
1	/	(/	H
2	G	(/	HG
3	-	(-	HG/
4	F	(-	HG/F
5	+	(-+	HG/F
6	(	(-+(	HG/F
7	E	(-+(	HG/FE
8	/	(-+(/	HG/FE
9	(	(-+/(	HG/FE
10	D	(-+/(	HG/FED
11	*	(-+/(*	HG/FED
12	C	(-+/(*	HG/FEDC
13	-	(-+/(-	HG/FEDC*
14	B	(-+/(-	HG/FEDC*B
15	)	(-+(/	HG/FEDC*B-
16	)	(-+	HG/FEDC*B-/
17	+	(-++	HG/FEDC*B-/
18	A	(-++	HG/FEDC*B-/A
19	)		HG/FEDC*B-/A++-

RESULT:

Reversed string of HG/F-EDC\*B-/A+= **+A+/-B\*CDE-F/GH**

2-) ! ( A && ! ( ( B < C ) || ( C > D ) ) ) || ( C < E )

**Solution:**

**a)PostFix:**

Sr. no.	Expression	Stack	Postfix
1	!	(	!
2	(	((	!
3	A	((	! A
4	&	((	! A &&
5	!	((	! A && !
6	(	((	! A && !
7	(	((	! A && !
8	B	((	! A && ! B
9	<	((	! A && ! B <
10	C	((	! A && ! B < C
11	)	((	! A && ! B < C
12		((	! A && ! B < C
13	(	((	! A && ! B < C
14	C	((	! A && ! B < C    C
15	>	((	! A && ! B < C    C >
16	D	((	! A && ! B < C    C > D
17	)	((	! A && ! B < C    C > D
18	)	((	! A && ! B < C    C > D
19	)	((	! A && ! B < C    C > D
20		((	! A && ! B < C    C > D
21	(	((	! A && ! B < C    C > D
22	C	((	! A && ! B < C    C > D    C
23	<	((	! A && ! B < C    C > D    C <
24	E	((	! A && ! B < C    C > D    C < E
25	)	((	! A && ! B < C    C > D    C < E
26	)	((	! A && ! B < C    C > D    C < E

**RESULT: !A&&!B< C || C > D || C < E**

**b)Prefix:**

**! ( A && ! (( B < C ) || ( C > D ))) || ( C < E )**

Reversed string: **( E < C ) || ( D > C ) || ( C < B ) ! && A !**

**Postfix table E < C ) || ( D > C ) || ( C < B ) ! && A !:**

Sr. no.	Expression	Stack	Prefix
0	(	((	
1	E	((	E
2	<	((	E <
3	C	((	E < C
4	)	(	E < C
5		(	E < C
6	(	((	E < C
7	(	((	E < C
8	(	((	E < C
9	D	((	E < C    D
10	>	((	E < C    D >
11	C	((	E < C    D > C
12	)	((	E < C    D > C
13		((	E < C    D > C
14	(	((	E < C    D > C
15	C	((	E < C    D > C    C
16	<	((	E < C    D > C    C <
17	B	((	E < C    D > C    C < B
18	)	((	E < C    D > C    C < B
19	)	((	E < C    D > C    C < B
20	!	((	E < C    D > C    C < B !
21	&&	((	E < C    D > C    C < B ! &&
22	A	((	E < C    D > C    C < B ! && A
23	)	((	E < C    D > C    C < B ! && A
24	!	((	E < C    D > C    C < B ! && A !
25	)		E < C    D > C    C < B ! && A !

**Result:**

**Reversed string of E < C || D > C || C < B ! && A !: ! A && ! B < C || C > D || C < E**