**Application of Stacks**

Q1. Convert the following infix expression to postfix and prefix expressions. Show the stack in both the cases:

1. A+B-C
2. (A+(B\*C))
3. (A\*(B\*(((C+A)+B)^C)))
4. (A+B)/(B-C)
5. A-(B\*X/Y-(C+Z\*M)+C)/D
6. A-B-C+D-(A-B)
7. A+(((B-C)\*(D-E)+F)/G)^(H-J)
8. (A+B)\*(C^(D-E)+F)-G
9. ((A-(B+C)\*D)^(E+F)
10. 10 + ((7 – 5) + 10)/2

Q2. Convert the following **postfix expression to prefix expression** showing the stack

1. ABC+-
2. AB+CE+\*
3. ABC\*+DE-/
4. ABCDE-+^\*EF\*-
5. AB-C+DEF-+^

Q3. Evaluate the following postfix expressions

1. 1 2 3 + \* 3 2 1 - + \*
2. 6 2 3 + - 3 8 2 / + \* ^ 3 +
3. 2 2 \* 4 4 \* + 4 /
4. 14 / 7 \* 3 – 4 + 9 / 2