

**Sir Syed University of Engineering and Technology**  
**Data Structure and Algorithm (SWE-203)**

**3rd Semester, Section C and E**

**Assignment # 2**

*Date of Submission: 27th April 2018*

**Q1) Convert the following Infix expressions into Postfix.**

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

**Q2) Convert the following Infix expressions into Postfix and evaluate them.**

- $(5 * (((9 + 8) * (4 * 6)) + 7))$
- $(B^2 - 4 * A * C)^{(1/2)}$
- $A * B + (C - D/E)$

Where  $A = 5$ ,  $B = 4$ ,  $C = 3$ ,  $D = 2$  and  $E = 1$

**Q3) Write the values of Front and Rear and Left and Right for Linear, Circular and Dequeue for the following conditions**

- a) When the queues are empty
- b) When the queues are full

**Q4) Consider a circular queue having memory cells  $N = 5$  initially the queue is empty. Perform the following operations and update the values of Front and Rear.**

- a) Red , Yellow and Brown are inserted
- b) Red is deleted
- c) Pink and Blue are inserted
- d) Yellow and Brown are deleted
- e) Black is inserted
- f) Pink is deleted

**Q5) Consider a dequeuer implemented through circular array having memory cells  $N = 5$  initially the Golden and Silver are in Dequeue at first and second position. Perform the following operations and update the values of Left and Right.**

- a) Red , Yellow and Brown are inserted from Left**
- b) One Left letter is deleted**
- c) Pink and Blue are inserted from Right**
- d) Two letters from right are deleted**
- e) Black is inserted from right**
- f) One left letter is deleted**

**Q6) What is priority queue? Write the real world and computer science example of priority queue.**

**Q7) Write the algorithm and example of Pre-Order, Post-Order and In-order Traversal using STACK.**