UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY
PANJAB UNIVERSITY, CHANDIGARH
B.E (ECE) – 5th Semester, Section-1 & 2
Data Structures & Algorithms (Minor 1)

Time: 01:30 hrs

Max Marks: 30
Note: Attempt all questions. Each question carries 5 marks each.

1. Why there is need to do an algorithm analysis? Highlight the difference between best case, worst case and average case complexities taking a suitable example .
2. Write an algorithm to show the postfix expression with the input given as: a b + c d +*f
3. If data is sorted in an increasing numerical order, then which algorithm should be used efficiently for searching. Also write that algorithm.
4. Let LIST be a linked list in memory consisting of numerical values. Write algorithm to find the average (MEAN) and product (PROD) of the elements in LIST.
5. Write algorithms to insert and delete kth element in a queue.
6. Suppose Q is the list of 14 characters.
   T, D, A, S, A, T, R, U, C, T, U, R, E, S
   The characters are to be sorted alphabetically. Which algorithm is used to do so? Explain.