NATIONAL INSTITUTE OF TECHNOLOGY KURUKSHETRA
B. TECH FIRST YEAR COMPUTER ENGINEERING
Data Structures (CSPC-12)
Mid Term-II

Duration: 50 Minutes   **Date: 28/05/2021**
Note: All questions are compulsory and there is no negative marking   **Max. Marks: 15**

Q1. Convert the given input expression from infix to postfix expression.
          R / D - Y * (G / C * (D - E) + B / Z) + S * A   2.5

Q2. Discuss the importance of sparse matrix in comparison of simple matrix along with their applications in real life. Consider a 4×5 matrix in the input and convert it in 3-triplet representation with the help of a program.   2.5

Q3. Answer the following:

a. Write the pseudo code for how elements are inserted from `front_end` and deleted from `rear_end` in double ended queue, and what is the time complexity of these operations.   5

b. Discuss the applications of Stack and how a user can implement the concept of parenthesis matching using stack.   5