Q1// A) Declaration a six dimensional array, and then write a function to compute row and column wise methods.

B) Convert the following infix expression into postfix notation using one stack

\[ X = a \wedge n - (p \times 4 + S) / F \text{ OR } (b - y / 3 + w) \text{ AND } (c \wedge 3) \wedge 2 \]

(6 marks)

Q2// Write a C++ program to perform the following steps in sequence:

1- Create a File content integer numbers.
2- Put even numbers in a Stack.
3- Put odd numbers in a Circular Queue.
4- Display the result.

(13 marks)

Q3// A) Suppose you have an Array A [Size] of integer values, write a complete recursion program to perform the following steps:

1- Split the values of A into two Arrays.
2- Find minimum and maximum value in splitted arrays.
3- Display the result.

B) Suppose you have a Tree (T), write a function to perform the following steps:

1- Find the number of terminal nodes
2- Find the number of nodes that have even values

(6 marks)

Q4// Given the following characters values (C + 0 * 1 - 5 / M \wedge 7 \cdot 2 + P \text{ and } 10 > 4 \cdot -U \geq T + E \text{ OR } 8 \wedge R)

Write a C++ program to perform the following steps in sequence:

1- Create a linked list.
2- Delete all operations.
3- Split the letters and numbers.
4- Display and draw the result.

(13 marks)

Q5// Discuss and solve the following case. If you have random file of integer numbers, what is the best algorithm to find any number in the random file?

(Note: write a program to solve this case)