SET-I for ODD Roll Numbers Only

CAP282: DATA STRUCTURES - LABORATORY

ASSIGNMENT

Date of Allocation: 31/03/2020 **Date of Submission:** 20/04/2020 **MM:** 50

Section#: D1904 **Name:** _____ **Roll No.:** _____

Important instructions to follow:

(i) Programs should be developed using C/C++ compiler only and must be documented and indented properly.

[*When all the programs are ready, put them in a single PDF file along with their respective outputs and upload on the link provided.*]

(ii) Write your Name and Roll number on the very first page of assignment.

(iii) Non-submission or Copy Case will lead to ZERO marks.

(iv) No extension allowed in Date of Submission.

(v) All questions are compulsory.

(vi) Feel free to contact through LPU Live in case of any problem.

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1. Develop a menu driven program to implement ***Binary Search Tree*** using linked representation and perform the following operations on it: **[20]**
   (i) Insertion operation
   (ii) Preorder traversal
   (iii) Inorder traversal
   (iv) Postorder traversal

2. Develop a menu driven program to implement ***Linear Queue*** using linked representation and perform the following operations on it: **[20]**
   (i) Enqueue operation
   (ii) Dequeue operation
   (iii) Traversal operation

3. Develop a program to implement ***Insertion Sort*** to sort an array of n elements in descending order. **[10]**

SET-II for EVEN Roll Numbers Only

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1. Develop a menu driven program to implement a ***Max-Heap*** and perform the following operations on it: **[20]**
   (i) Insertion operation
   (ii) Deletion operation
   (iii) Sorting an array of size n

2. Develop a menu driven program to implement a ***Priority Queue*** using linked representation and perform the following operations on it: **[20]**
   (i) Enqueue operation
   (ii) Dequeue operation
   (iii) Traversal Operation

   Note: *Assume the priority number is interpreted as lower the number higher the priority.*

3. Develop a program to find a given item from an array of size n using ***Binary Search***. **[10]**