PVP Siddhartha Institute of Technology, Kanuru, Vijayawada-7

Academic Year: 2024-25 **Program: B.Tech (CSE)**

Subject: Advanced Data Structures & Algorithm Analysis(20CS3302)

Regulation: PVP23

Year/Semester: II Year I Semester(Section-1)

Assignment – 1(first-part) **Max marks: 2.5 marks**

1. Draw all the rotations that you must perform and the final AVL tree after the following elements are inserted in the given order starting from an empty tree.

   1; 10; 5; 7; 3; 13; 6; 4; 8; 9

2. We are inserting the following five keys into an initially empty tree:

   6; 20; 45; 80; 96

   Determine an insertion order that will trigger a double rotation at some point (and no other rotations)

3. Show the results of inserting the keys
   F, S, Q, K, C, L, H, T, V, W, M, R, N, P, A, B, X, Y, D, Z, E
   in order into an empty B-tree with minimum degree t = 3.

4. Perform delete operation on the B-tree(minimum degree is 3) generated in the question no.3

   a. Delete L
   b. Delete R
   c. Delete A
   d. Delete Z

Note: Mention the delete cases for each delete operation