

Advanced Data Structures and Algorithms (CSPC-31)

B.Tech, 5th Semester (Computer Engineering)

Date: 19.09.2022, MM:20

- Q1. Show that the amortized complexity of decrement operation over  $k$  bit binary counter is  $O(1)$  using potential method. (4)
- Q2. a) Explain the advantages of splay tree in representation of dictionaries. (4)  
b) What are the drawbacks of m-way search trees? (4)
- Q3. What is suffix trie? Draw a compact representation of suffix trie for the string "minimize minime". (4)
- Q4. What will the maximum height of AVL tree with  $n$  elements initially sorted in ascending order? If the order of elements is changed then, what will the effect on height? If it is changed or not. Justify (4)
- Q5. From the given Redblack tree, remove the node 12 and then 16 and explain the algorithmic procedure. Also represent the same with 2-4 tree deletion. (4)

