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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**M.Tech I Year I Semester (R16) Regular Examinations January 2017****ADVANCED DATA STRUCTURES AND ALGORITHMS**

(Computer Science Engineering)

(For Students admitted in 2016 only)

Time: **3 hours**Max. Marks: **60**(Answer all Five Units **5 X 12 =60** Marks)**UNIT-I**

- Q.1** a. What is LINKED LIST and explain STACKS Using LINKED LISTS? 8M
b. Explain stack applications? 4M

OR

- Q.2** a. Write a recursive algorithm for permutation generator? 6M
b. What is average, best and Worst Complexities? 6M

UNIT-II

- Q.3** a. Explain Tree Traversing Techniques With suitable examples? 4M
b. Write about AVL Tree applications? 8M

OR

- Q.4** Define DFS? Write the DFS Traversing algorithm with example? 12M

UNIT-III

- Q.5** a. What is Binary Search Tree? Explain insertion & Deletion algorithms with examples? 10M
b. Explain about RED BLACK Tree & its properties? 2M

OR

- Q.6** a. Construct the AVL Tree given the list of elements S={ GREEN, BLUE, YELLOW, RED, ORANGE, VOIOLET ,PINK} and DELETE YELLOW, PINK ? 6M
b. Explain Hashing Techniques in detail with examples? 6M

UNIT-IV

- Q.7** a. Write Merge sort algorithm with example? 8M
b. Write about Strassen's Matrix multiplication with suitable example? 4M

OR

- Q.8** a. Explain Minimum Cost Spanning Tree using Kruskal's Algorithm with example 8M
b. Explain General Method of Divide –and – Conquer? 4M

UNIT-V

- Q.9** a. Explain Travelling Sales man problem in detail? 6M
b. Explain about All Pairs Shortest path Problem with example? 6M

OR

- Q.10** a. Explain how backtracking is applied for 4 Queen's Problem? 8M
b. Explain different types of searching techniques in Branch and Bound? 4M

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