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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)  
MCA I Year II Semester Supplementary Examinations Jan 2018  
DATASTRUCTURES**

Time: 3 hours

Max. Marks:60

(Answer all Five Units 5 X 12 = 60 Marks)

**UNIT-I**

1 Write a Routine for sorting elements using quick sort method. Explain the working of the routing with an example 12M

**OR**

2 What is searching? Explain Binary search algorithm with example and also find its time complexity. 12M

**UNIT-II**

3 a What is Linked list? Explain applications of linked list. 6M  
b Explain the doubly linked list in detail 6M

**OR**

4 What is linked list? Write and explain the algorithm for create, insertion and traverse operations in doubly linked list with example. 12M

**UNIT-III**

5 What is stack? Write algorithm for operations of stack with examples. 12M

**OR**

6 What is double ended queue? Discuss the operations of Double ended queue 12M

**UNIT-IV**

7 What is binary search tree? How to implement recursive traversal techniques on Binary search tree. Discuss with an example 12M

**OR**

8 Discuss about Red-Black and Splay trees. 12M

**UNIT-V**

9 Explain Dijkstra's algorithm with an example. 12M

**OR**

10 Explain DFS algorithm with example. 12M

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