## SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
### (AUTONOMOUS)
### B.TECH I Year II Semester Supplementary Examinations December 2018
### DATA STRUCTURES THROUGH C
### (CSE & CSIT)

Time: **3 hours**                                                                 Max. Marks:**60**

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

### UNIT-I

| | | |
|---|---|---|
| **1** | **a.** Explain how Sparse matrix can be used to represent Two-dimensional arrays? | 6M |
| | **b.** Write short note on Pointer Arrays? | 6M |

**OR**

| | | |
|---|---|---|
| **2** | Explain in detail about insert and delete operation on linked list with suitable example? | 12M |

### UNIT-II

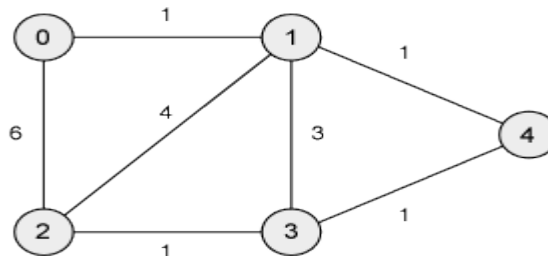| | | |
|---|---|---|
| **3** | **a.** Explain the algorithm to Evaluate postfix expression. | 6M |
| | **b.** Evaluate the following postfix expression with a=2, b=3, c=6 and d=8 values **c a b + - b d a / + * a $ b +** | 6M |

**OR**

| | | |
|---|---|---|
| **4** | Explain about various operations on Queues using arrays with algorithms? | 12M |

### UNIT-III

| | | |
|---|---|---|
| **5** | Explain about different types of Tree traversal operations on Binary Tree with example. | 12M |

**OR**

| | | |
|---|---|---|
| **6** | Explain about Dijkstra's algorithm with following graph for finding Single Source Shortest Path? | 12M |



### UNIT-IV

| | | |
|---|---|---|
| **7** | Explain Heap sort with algorithm and suitable example? Analyze time complexity? | 12M |

**OR**

| | | |
|---|---|---|
| **8** | What is basic idea behind Sorting by Exchange? Explain Bubble sort algorithm to sort the values?     97, 53, 59, 25, 42, 50, 30, 15, 23, 32 | 12M |

### UNIT-V

| | | |
|---|---|---|
| **9** | Explain how Fibonacci search is better than Binary search? Explain Fibonacci Search algorithm with a suitable example? | 12M |

**OR**

| | | |
|---|---|---|
| **10** | What is Hash Table and Hashing? Explain different types of Hashing techniques with examples? | 12M |

**\*\*\* END \*\*\***