

I B. Tech II Semester Supplementary Examinations, December 2015**DATA STRUCTURES**

**(Common to Electronics and Communication Engineering and
Information Technology)**

Time: 3 Hours**Max. Marks: 60****Note:** All Questions from **PART-A** are to be answered at one place.Answer any **FOUR** questions from **Part-B**. All Questions carry equal Marks.**PART-A****6 × 2 = 12M**

1. Discuss about linear data structures.
2. Explain any two applications of stack.
3. Discuss the advantages of doubly linked list.
4. Discuss about binary search trees.
5. Discuss about quick sort.
6. Explain about graphs.

PART-B**4 × 12 = 48M**

1. a) Explain about delete operation in singly linked list. (6M)
b) Write a C program to implement insert operation in a doubly linked list (6M)
2. a) Write an algorithm for converting infix expression to postfix expression. (6M)
b) Write a C program to implement stack ADT using arrays. (6M)
3. a) Write a C program to implement Queue ADT using arrays. (6M)
b) Explain about circular queues. (6M)
4. a) Write a method to delete the an element from a Binary Search Tree. (6M)
b) Discuss various methods to traverse the Binary Search Tree? (6M)
5. a) Explain about Merge sort. (6M)
b) Write an algorithm for Bubble sort and also analyze the time complexity of it. (6M)
6. a) Explain the BFS technique in detail with an example. (6M)
b) Explain about the Kruskal's algorithm with an example. (6M)
