

Code No: RT21042

R13

SET - 1

II B. Tech I Semester Supplementary Examinations, May/June - 2017

DATA STRUCTURES

(Com. to ECE, CSE, EIE, IT, ECC)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)

2. Answer **ALL** the question in **Part-A**

3. Answer any **THREE** Questions from **Part-B**

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**PART - A**

1. a) Distinguish between Linear search and Binary search (4M)
- b) What are the applications of stack (3M)
- c) What are the advantages of circular linked list (3M)
- d) How many binary trees are possible with four nodes (4M)
- e) What is threaded binary tree (4M)
- f) What is graph? Explain its key terms (4M)

**PART - B**

2. a) Sort the following list of elements by using insertion sort (8M)  
35, 19, 66, 14, 8, 10, 57, 100
- b) Write an algorithm for Fibonacci series (8M)
3. a) Write a program to convert an infix expression into its equivalent postfix expression (8M)
- b) Explain the operations of Queue with an example (8M)
4. a) Write a program for the implementation of double linked list (10M)
- b) Explain the how to insert node in the middle of the list (6M)
5. a) Covert the prefix expression  $-/ab*+bcd$  into infix expression and then draw the corresponding expression tree (8M)
- b) Define binary tree? Explain how to represent the binary tree with an example (8M)
6. a) Explain the deletion operation of Binary search tree with an example (8M)
- b) Write an algorithm for splitting a binary search tree (8M)
7. a) Explain the representations of Graphs (8M)
- b) Write an algorithm of DFS (8M)