Code No: RT21042   **R13**   SET - 1

II B. Tech I Semester Supplementary Examinations, Oct/Nov- 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)	Write an algorithm for factorial of a given number	(4M)
	b)	What are the applications of Queue	(3M)
	c)	What are the advantages of double linked list	(4M)
	d)	What is the maximum length and height of a tree with 32 nodes	(4M)
	e)	Explain the searching operation of binary search tree with an example	(4M)
	f)	What is spanning tree	(3M)

PART –B

2.	a)	Sort the following list of elements by using merge sort 39, 16, 45, 11, 55, 18, 43, 88	(8M)
	b)	Explain about the Towers of Hanoi problem	(8M)
3.	a)	Write an algorithm to convert an infix expression into prefix expression	(8M)
	b)	Explain the operations of a Queue with an example	(8M)
4.	a)	Write a program for the implementation of circular linked list	(10M)
	b)	Explain the operations of singly linked lists	(6M)
5.	a)	Write an algorithm for post order traversal	(8M)
	b)	Explain the operations of binary tree with an example	(8M)
6.	a)	Write deletion algorithm of binary search tree	(8M)
	b)	Define Binary tree. Explain how to represent the Binary tree with an example	(8M)
7.	a)	Write an algorithm of BFS	(8M)
	b)	Explain about the Prim's minimum cost spanning tree with an example	(8M)