Code No: R21051   R10   SET - 1

II B. Tech I Semester Supplementary Examinations, May/June - 2017
DATA STRUCTURES
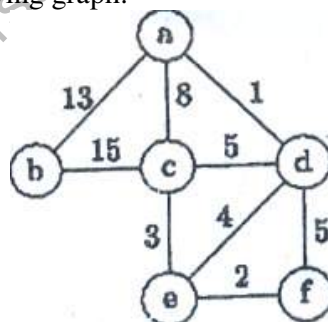(Computer Science & Engineering)

Time: 3 hours   Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1.	a)	Explain Towers of Hanoi Problem? Write the Algorithm	(8M)
	b)	Derive the best case, average case and worst case time complexity of Binary Search?	(7M)
2.		Explain Radix Sort Algorithm? Sort the following list of elements using Radix sort: **121, 540, 632, 177, 788, 932, 543, 189, 365, 832, 737**	(15M)
3.	a)	What is Stack? Explain stack implementation and its operations using Arrays?	(8M)
	b)	Explain the Applications of Queues?	(7M)
4.		Design and explain the algorithm for insertion and deletion on double linked lists?	(15M)
5.		What is Binary tree? Write the pseudo code and Explain the operations on binary tree and trace with an example?	(15M)
6.	a)	Explain the properties of Binary search tree? Construct Binary search tree for the following elements: **67, 12, 45, 98, 80, 73, 7, 120, 85, 30. 42**	(8M)
	b)	Explain the Threaded binary trees?	(7M)
7.		Write and explain Warshall's Algorithm to find the all pair shortest paths? Trace the algorithm for the following graph:	(15M)

8.	a)	What is set data structure? Explain its representation using linked list?	(8M)
	b)	Explain ADT implementation of Queues?	(8M