Code No: R1622053 **R16** SET - 1

II B. Tech II Semester Regular/Supplementary Examinations, November - 2020
ADVANCED DATA STRUCTERES
(Computer Science and Engineering)

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 **FOUR** Questions from **Part-B**

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PART –A

1.	a)	In how many ways can two sorted arrays of *n* elements be merged?	2M
	b)	List the Heap Properties?	3M
	c)	How many trees will be there in a binomial queue of 40 elements?	2M
	d)	What is the maximum number of nodes in an AVL tree of a given height h?	2M
	e)	How do you perform search operation in M-Way Search Trees?	3M
	f)	Give some applications of Digital search trees?	2M

PART –B

2.	a)	Write a routine that reads in two alphabetized files and merges them together, forming a third, alphabetized, file?	7M
	b)	Explain the external sorting technique using a list containing 6000 records and internal memory capable of sorting at most 750 records. Block length is 250 records?	7M
3.	a)	Explain Secure Hash function with an example?	7M
	b)	Write an algorithm to delete a directory pair from a directory less dynamic hash table?	7M
4.	a)	Explain the priority queue solution for event simulation problem?	6M
	b)	Show the result of constructing a binomial heap using the following elements 9, 1, 3, 5, 4, 7, 2, 8, 6, and 10 one at a time, into an initially empty binomial heap.?	8M
5.	a)	Write AVL tree deletion algorithm?	6M
	b)	Explain insertion algorithm of Red-Black tree and insert the following keys:40,10, 30, 35, 25, 27, 26, 60, 55,61,80	8M
6.	a)	Compare and contrast B-Tree and B^+ Tree?	6M
	b)	Assume that t=2. Draw the B-tree that will be created after inserting the following elements (in this order) A,B,C,D,G,H,K,M,R,W,Z.	8M
7.	a)	Explain fixed stride tries and variable stride tries?	7M
	b)	Explain the tries and internet packet forwarding?	7M
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