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

II B. Tech II Semester Supplementary Examinations, November - 2019
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)	Present the asymptotic computing time of Huffman algorithm.	(3M)
	b)	Define key density.	(2M)
	c)	What is a binary max heap? Give an example.	(2M)
	d)	What is black height of a node in red-black trees?	(2M)
	e)	In what way B^+ trees are different from B trees?	(3M)
	f)	What is prefix search?	(2M)

PART -B

2.	a)	Write and explain k-way merge algorithm with floating buffers.	(9M)
	b)	Discuss the drawbacks of k-way merging with higher k values.	(5M)
3.	a)	Discuss about dynamic hashing with directories. Give an example.	(7M)
	b)	List the pros and cons of chaining and open addressing.	(7M)
4.	a)	Derive expression for asymptotic time complexity of *build_heap* algorithm.	(7M)
	b)	Explain event simulation problem with an example.	(7M)
5.	a)	Write about *twoWayJoin*, *threeWayJoin* and *split* operations w.r.to red-black trees.	(7M)
	b)	Derive an expression for maximum height of an AVL tree with n nodes.	(7M)
6.	a)	Insert the below elements one by one into an initially empty B tree of order 3: 45, 35, 95, 96, 80, 70, 60, 50, 92, 75	(7M)
	b)	What are deficient nodes in B^+ trees? How they are corrected? Give examples.	(7M)
7.	a)	Discuss about the structure and operations of a Digital Search Tree. What are the demerits of digital sear trees? Which structures are used to overcome them?	(7M)
	b)	Differentiate between Fixed-Stride and Variable-Stride tries.	(7M)
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