QPC: RJ20MTECH025 AR 19 Reg. No | | | | | | | | | | |

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester – Regular) Examinations, June – 2021

MPCCS1020 – ADVANCED DATA STRUCTURES

(Computer Science)

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A **(2 x 10 = 20 Marks)**

Q1. Answer **ALL** questions

a. Differentiate set and directory
b. What is abstract data type?
c. What is skip list?
d. To which data structure are skip lists similar to in terms of time complexities in worst and best case
e. What is the purpose of using B tree?
f. How to search for an item in a 2-3 tree?
g. What is the advantage of using a tree?
h. How does Huffman code work?
i. What is the simplest data structure that supports range searching?
j. State the applications of computational geometry

PART – B **(6 x 5 = 30 Marks)**

Answer ***ANY FIVE*** questions **Marks**

2. What are the different types of collision resolution techniques available? Explain any one technique with example. (6)
3. Explain insertion algorithm in skip list (6)
4. What is a red-black tree? State the properties that a red-black tree holds (6)
5. What is an AVL search tree? How do we define the height of it? Explain balance factor associated with a node of an AVL tree (6)
6. Compute Huffman code for the following symbols (6)

S. No	A1	A2	A3	A4	A5	A6
Probability	0.4	0.3	0.1	0.1	0.06	0.04

7. Write the algorithm for constructing a priority search tree (6)
8. Discuss the various computational geometry methods (6)

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