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GIET UNIVERSITY, GUNUPUR - 765022
M. Tech (First Semester) Examinations, January - 2024
MPCCS1020 - Advanced Data Structures
(CSE)

Time: 3 Hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A**(2 x 10 = 20 Marks)**

Q.1. Answer all questions

	CO#	Blooms Level
a. Explain the concept of open addressing.	CO1	K2
b. How skip list is different from linked list?	CO2	K2
c. Construct an BST from the following values 56,34,67,23,14,34,7.	CO2	K3
d. List out properties of 2-3 tree.	CO3	K2
e. Construct the compressed trie for the following string. S={book, board, apple, app, apic}.	CO3	K3
f. Explain the concept of hashing with example.	CO4	K3
g. How B-Tree is different from 2-3 tree?	CO4	K2
h. Elaborate the set of steps to find longest common subsequence's from two strings (S1 = "AGGTAB", S2 = "GXTXAYB")	CO4	K2
i. Describe the properties of red-black tree.	CO2	K3
j. Define the term random probing.	CO1	K4

PART – B**(10 x 5=50 Marks)**Answer **ANY FIVE** questions

	Marks	CO#	Blooms Level
2. Analyze the time complexity and collision resolution techniques in hashing.	10	CO2	K3
3. Enlists the permissible operation on a skip list. Write down the application, pros and cons of a skip list.	10	CO2	K2
4. Define Binary search tree. What are the major differences between a binary search tree and AVL tree? Construct an AVL tree for the data. S={416,891,456,765,111,654,345,256,333,123,345,523,540}.	10	CO3	K3
5. Insert the values from 1-10 using Red and Black tree concept.	10	CO3	K3
6. How would you deal with the assignment problems when some assignments are prohibited?	10	CO3	K3

7.	Differentiate one Dimensional Range Searching and Two Dimensional Range Searching with an example.	10	CO4	K4
8. a.	Explain about the Brute force pattern matching algorithm.	5	CO3	K2
b.	Describe about pattern matching algorithm. Mention its types. Explain the applications of pattern matching algorithm.	5	CO3	K2