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GODAVARI INSTITUTE OF ENGINEERING & TECHNOLOGY (A), RJY

III B. Tech II Sem (CSE/CSE-AIML) (R/S) (A.Y.2023-24),(GRBT-20)

END EXAM QUESTION PAPER: ADVANCED DATA STRUCTURES

CODE No. 201CS664D/201AI601; DATE: 04/05/2024: 10.00 am to 01.00 pm

Duration: 3 Hrs **Max. Marks: 5 X 14=70**

ANSWER ALL THE QUESTIONS

ALL QUESTIONS CARRY EQUAL MARKS

Q.NO.	Question	Bloom's Taxonomy	Course Outcomes	Marks
	UNIT-1			
1.1	a) What is a hash table? What is hash function? What is bucket and home bucket?	L2	CO1	7M
	b) Why reshaping is needed? What are the types of rehashing techniques available? Explain any one technique with examples?	L2	CO1	7M
	(OR)			
1.2	a) Following elements are inserted into an empty hash table with hash function f(x) = x% 13 and linear probing 112, 44, 52, 45, 37, 278, 89, 28, 61,249	L1	CO1	7M
	b) Explain hashing methods with an example.	L2	CO1	7M
	UNIT-2			
2.1	a) Explain the operations on AVL Trees in detail?	L2	CO2	7M
	b) Explain three possible cases for inserting a node in the 2-3 Trees? Construct 2-3 Tree with the following data 50, 20, 60, 90, 40, 100, 10.	L2	CO2	7M
	(OR)			
2.2	a) Explain about deletion procedure in AVL tree. With example explain deletion operation in AVL tree.	L2	CO2	7M
	b) Write Algorithm for 2-3 Tree deletion and discuss its analysis.	L2	CO2	7M
	UNIT-3			
3.1	a) Explain Graph operations with an example.	L2	C03	7M
	b) Explain Breadth First Search with an example.	L2	C03	7M
	(OR)			
3.2	a) Explain the various representation of graph with example in detail?	L2	C03	7M
	b) Explain Depth First Search with an example.	L2	C03	7M
	UNIT-4			
4.1	a) Explain the properties of Red Black Trees with an example.	L2	C04	7M
	b) Explain insertion operation in Red Black Trees with an example.	L2	C04	7M
	(OR)			
4.2	a) Explain splay tree with an example.	L2	CO4	7M
	b)) Explain Deletion operation in Red Black Trees with an example	L2	CO4	7M

P-T-O

	UNIT-5			
5.1	a) Explain working principal of Knuth Morris Pratt algorithm with example.	L2	CO5	7M
	b) List the advantages and disadvantages of Tries.	L1	CO5	7M
	(OR)			
5.2	a) Explain the main features of Boyer-Moore algorithm,	L2	CO5	7M
	b) Discuss the following: i) Binary tree ii) Multi-way tree.	L2	CO5	7M