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Department of Computer Science and Engineering
M.Tech in Computer Science and Engineering (CSE)
Continuous Internal Evaluation (CIE-II) Question Paper

Course:	Advanced Data Structures and Algorithms	Course Code: 22MCE12TL	Semester: 01
29.05.2023	Duration : 90 minutes	Max Marks: 50	Staff: RS
Sl. No.	Answer all questions		M,*L1 - L6,CO
1a.	Discuss the Structure of Fibonacci heaps with a suitable example. Illustrate the following operations on the Fibonacci heaps Decreasing a key (ii) Deleting a node		6,L3, CO1
1b.	Apply the Randomized Quicksort algorithm for the following data and perform sorting on it. 102, 100, 99, 86, 35, 25		4,L3, CO1
2a.	Differentiate between the working of Naïve, Rabin Karp algorithm and KMP string matching algorithm.		6,L4, CO2
2b.	Mention any two applications of Rabin Karp algorithm and KMP string matching algorithm.		4,L4, CO2
3a.	Apply KMP algorithm and search for the Pattern in the Text. Discuss the time complexity of the algorithm. Text: ababcabababa Pattern: abab		6,L4, CO4
3b.	Find the edit-distance values using minimum edit distance algorithm to convert the string “Hello World” to “Hello RVCE”		4,L2, CO2
4a.	Apply Rabin Karp algorithm and search for the Pattern in the Text. Discuss the time complexity of the algorithm. Text: 81238927897896 Pattern:896		6,L4, CO4
4b.	Generate the failure function or the π table for the patterns Pattern1: ababcabab Pattern2: abyabcbabcabaabb		4,L3, CO3
5a.	Explain the working of Miller-Rabin Primality Test by taking a suitable example.		2,L2, CO1
5b.	Apply Miller-Rabin Algorithm using base 2 to test whether the number 341 is composite or not.		8, L5, CO3



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