Reg. No.:

Name :

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Mid Term Examinations– December 2020

Programme	:	**B.Tech – Computer Science and Engineering**	Semester	:	**Interim 2020-2021**
Course	:	**Design and Analysis of Algorithm**	Code	:	**CSE3004**
Faculty	:	**Mr. Muneeswaran V**	Slot/Class No.	:	**D11 / 1046**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q. No.	Question Description	Marks
1	Sort the lists {'c', 'o', 'm', 'p', 'a', 'r', 'i', 's', 'o', 'n'} in non-decreasing order by the following class P algorithm (step by step results expected for each iteration) and find the efficiency class? *ALGORITHM ComparisonCountingSort(A[0..n − 1])* *//Sorts an array by comparison counting* *//Input: An array A[0..n − 1] of orderable elements* *//Output: Array S[0..n − 1] of A's elements sorted in nondecreasing order* *for i ← 0 to n − 1 do* *Count[i]← 0* *for i ← 0 to n − 2 do* *for j ← i + 1 to n − 1 do* *if A[i] < A[j] Count[j]← Count[j] + 1* *else Count[i]← Count[i] + 1* *for i ← 0 to n − 1 do* *S[Count[i]]← A[i]* *return S*	**10**
2	A computer scientist wants to construct the optimal binary search tree with his programming solutions made by the various programming languages as shown in the following table, use dynamic programming technique to construct the optimal binary search tree with the pseudo code:	**10**
3	Muddy City, where the roads get too muddy to use when it rains. The mayor decided to pave some of the streets, but did not want to spend more money than necessary. Such that everyone can travel from their house to anyone else's house using only paved roads. Each street is made up of a certain number of stones. The number of stones represents the cost of paving that street. Solve this problem with a greedy design technique and write the pseudo code also.	**10**

Keys	ADA	BASIC	COBOL	FORTRAN	JAVA	Python
No. of Solutions	731	548	1050	639	822	776

4 Write a pseudocode for Naive String matching algorithm to find all possible pattern in a given string. Using this algorithm to search for the all possible pattern "**ISS**" in the given text "**BLISSY_KISS_LEISSY**" with step by step results and find the time complexity using your pseudocode. **10**

5 Construct the Suffix tree for the following gene segment of your chromosome 10: "**TCCTATTCTT**". Need step by step results. **10**

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