



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
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DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

ASSIGNMENT-1

Name of Course Instructor: Dr. M. Sitha Ram, Dr. S. Nagarjuna Reddy, Mr. N.V.Naik,

Mrs. G.V. Rajya Laxmi

Reg: R23

Course Name & Code : ADS&AA & 23CS04

Cycle: 01

L-T-P Structure : 3-0-0

Credits: 3

Program/Sem/Sec : CSE/B.TECH/III

A.Y.: 2024-25

Q.No		Blooms Level	Course Outcome	Unit
1	Show that the following equalities are correct. $33n^3+44n^2+50n=O(\log n)$ $5n^3+4n^2+5\log n-1=O(n^2\log n)$ $n^{1.001}+n\log n=\theta(n^{1.001})$	L3	CO1	I
2	Use the step count method to estimate the time complexity of the following algorithm in which the run starts from the function CallSum (array1,array2,n). Then find the time complexity when n = 3, 6 and 10. CallSum (array1,array2,n) { for (i=0; i<n; i++) array2[i] = sum (array1,i+1); } sum (array,n) { total_sum = 0; for (i=0; i<n; i++) total_sum = total_sum + array[i]; return total_sum; }	L4	CO1	I
3	Start with an empty AVL Tree and perform the following sequence of insertions: December, January, April, March, July, August, October, February, November, May, June	L3	CO1	I
4	Consider an empty B-Tree with order 5 and insert the elements in the following sequence: 6, 13, 16, 11,7,17,14,8,5,19,15,1,2,4,18,13,9,20,10,12,21.	L3	CO1	I
5	Design and analyze the time and space complexities of Towers of Hanoi with suitable example.	L4	CO3	II
6	Apply Quick Sort algorithm for the list of elements: 54, 26, 93, 17, 77, 31, 44, 55 ,20	L3	CO3	II
7	Let G be a connected undirected graph. write an algorithm to find the minimum number of edges have to be added to G so that G becomes biconnected. Your algorithm should output such a set of edges. Analyze the time complexity of your algorithm?	L4	CO3	II

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
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Name of the Faculty	Dr. M. Sitha Ram	Dr. M. Sitha Ram	Dr. Y.V.B REDDY	Dr. D. Veeraiah
	Dr. S. Nagarjuna Reddy			
	Mr. N.V.Naik			
	Mrs. G.V. Rajya Laxmi			
Signature				