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
L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.

DEPARTMENT OF INFORMATION TECHNOLOGY

ASSIGNMENT-1

Name of Course Instructor: D.Vijayasri,J.GeethaRenuka

Course Name & Code : DS & 23CS02
L-T-P Structure : 3-0-0
Program/Sem/Sec : IT/B.TECH/II

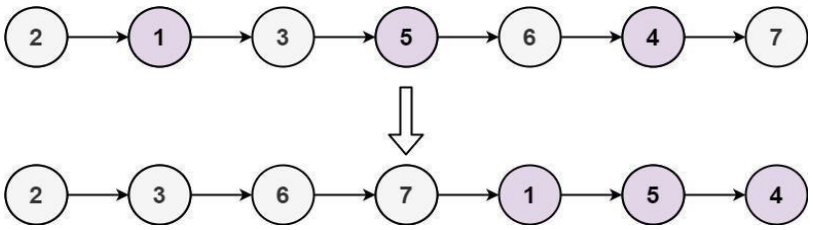
Reg: R23
Cycle: 01
Credits: 3
A.Y.: 2024-25

Q.No	Question Description	Blooms Level	Course Outcome	Unit

1	Estimate the step count/ frequency count for the following code.
	for(i=1; i<=n; i++)
	{
	for(j=1;j<=i; j++)
	{
	for(k=1;k<=100;k++)
	{
	Printf ("lbrce");
	}
	}
	}
		L3	CO1	I

2	Show that the following equalities are correct. □ $33n^3+44n^2=\Omega(n^2)$ □ $10n^2+4n+2\log n+1=O(n^3)$	L2	CO1	I
3	Search the Character **S** using Binary Search Algorithm on the following array of characters: **A E G K M O R S Z** fill the below table after each iteration Iteration | Left | Right | Middle | Number of Comparisons	L3	CO1	I
4	Write C Function for displaying all the elements at the index of multiples of k with the first element assumed to have an index of 0. **Input:** **K=3 12□13□14□15□16□17□18□NULL** **Output: 12□15□18□NULL**	L3	CO2	II
5	Write a C functions that removes elements with even indices from a singly linked list. (Position starts from 0) **Original linked list:** **7□6□ 5□ 4□ 3□ 2□ 1** **Linked list after removing even indices:**	L3	CO2	II

	6 4 2			

6	Write a C program to merge two sorted singly linked lists into a single sorted linked list. **Input:** **Two sorted singly linked lists: 1 3** **5 6** **2 4 6** **After merging the said two sorted lists:** **1 2 3 4 5 6 7**	L3	CO2	II
7	Given the head of a singly linked list, group all the nodes with odd indices together followed by the nodes with even indices, and return the reordered list. The first node is considered odd, and the second node is even, and so on. Note that the relative order inside both the even and odd groups should remain as it was in the input.  	L3	CO2	II