O.P.Code: 20CS0501	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations February-2024
C PROGRAMMING AND DATA STRUCTURES
(Common to CE, AGE, CSE, CSIT, CSM, CIC, CAD, CCC & CAI)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	List different C language elements.	CO1	L2	4M
	b	Explain the C language elements with example.	CO1	L2	8M
		OR			
2	a	List the different decision statements available in C.	CO2	L4	4M
	b	Discuss each decision statement with suitable example.	CO2	L2	8M
		UNIT-II			
3	a	Define function. Explain the types of functions with an example.	CO3	L1	6M
	b	Write a C program to swap two numbers using functions.	CO3	L3	6M
		OR			
4	a	Define recursion. Create a C program for factorial of a given number using function recursion.	CO2	L6	6M
	b	Create a C program to perform the following string library function strlen(), strcpy(), strcat(), strcmp().	CO2	L6	6M
		UNIT-III			
5	a	Define pointer. Write the syntax for declaring pointer with example.	CO3	L1	6M
	b	Describe about pointers and arrays.	CO3	L2	6M
		OR			
6	a	Define structure within a structure? Explain with an example.	CO3	L1	6M
	b	Describe about array of structures.	CO3	L2	6M
		UNIT-IV			
7	a	List the applications of stack.	CO5	L1	6M
	b	What is a queue? What are various operations that can be performed on them? Explain with an example.	CO5	L1	6M
		OR			
8	a	Illustrate the following operations in double linked list i) Create an empty list ii) Insert the elements 10 and 20 at the front of the list. iii) Insert the element 30 at the middle of the list. iv) Insert the element 15, 45 at the end of the list. v) Delete the middle element from the list.	CO6	L3	8M
	b	Explain the following single linked list operations: Insertion of a node Deletion of node	CO6	L2	4M
		UNIT-V			
9	a	Explain about linear search with algorithm.	CO6	L2	6M
	b	Explain about binary search with algorithm.	CO6	L2	6M
		OR			
10		Explain the algorithm for quick sort and give a suitable example.	CO6	L2	12M

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