Reg. No.															

Question Paper Code	12543

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

First Semester

(Common to All Branches except Computer Science and Business Systems)

20ESCS101 - PROBLEM SOLVING AND PROGRAMMING IN C

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART-A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Describe the paradigm of programming.	*2,K2,CO1*
2.	Compare pseudo code with an algorithm.	*2,K2,CO1*
3.	Mention the purpose of scanf() and printf() statement.	*2,K2,CO2*
4.	Differentiate between while loop and do-while loop.	*2,K2,CO2*
5.	Define an Array.	*2,K1,CO3*
6.	Summarize the difference between binary and linear search.	*2,K2,CO3*
7.	Define Recursive Function.	*2,K1,CO4*
8.	Determine the purpose of the pointer.	*2,K2,CO4*
9.	What is mean by Self Referential Structure?	*2,K1,CO5*
10.	Define Linked List.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i). What are the basic models of computation and programming techniques?	*3,K2,CO1*
		(ii). Discuss the different steps followed in the program development.	*10,K2,CO1*
		OR	
	b)	(i). Compare the flowchart and algorithm**.**	*5,K2,CO1*
		(ii). Illustrate an algorithm and draw flowchart for finding greatest among three given numbers**.**	*8,K2,CO1*
12.	a)	(i). Classify the different types of storage classes with suitable example.	*8,K2,CO2*
		(ii). Summarize any five types of C operators**.**	*5,K2,CO2*
		OR	
	b)	Explain in detail about decision making and looping in C with suitable examples for each.	*13,K2,CO2*

13. a) Develop a C program to calculate Mean, Median and Mode for an array of elements. *13,K3,CO3*

OR

b) Explain in detail about various string handling functions available in C language and give an example program for any three string handling functions. *13,K3,CO3*

14. a) Explain in detail about recursion concept and write a suitable program. *13,K3,CO4*

OR

b) Write a C program for menu driven scientific calculator using built-in functions. *13,K3,CO4*

15. a) Explain the following
(i) Array of Structures with suitable example. *7,K2,CO5*
(ii) Nested Structures with example program. *6,K2,CO5*

OR

b) Explain in detail about Pass by Value and Pass by Reference and write a program to swap two numbers. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Write and Discuss C program to read and write employee details such as Basic pay, TA, DA, gross pay, net pay, id and DOJ using Structures. *15,K2,CO6*

OR

b) Discuss in detail about the various operations performed on file using suitable examples. *15,K2,CO6*