17 AUG 2023

Reg. No.													

Question Paper Code	12143

B.E. / B.Tech - DEGREE EXAMINATIONS, APRIL / MAY 2023

First Semester

Computer Science and Engineering

(Common to All Branches)

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.	What is an algorithm? List the characteristics of a good algorithm.	*2,K2,CO1*
2.	Differentiate compiler and interpreter.	*2,K2,CO1*
3.	What is the keyword? Give examples.	*2,K2,CO2*
4.	Differentiate break and continue.	*2,K2,CO2*
5.	Define Strings.	*2,K1,CO3*
6.	Difference Linear search and binary search.	*2,K2,CO3*
7.	List the uses of function in C.	*2,K1,CO4*
8.	What is a Pointer? How a variable is declared to the pointer?	*2,K2,CO4*
9.	Define Structure in C with an example.	*2,K2,CO5*
10.	What is the use of fseek()?	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) Explain various phases in the Program Development Life Cycle with a neat diagram.	*7,K2,CO1*
		(ii) Write an algorithm to check whether given year is leap year or not	*6,K2,CO1*
		OR	
	b)	Explain in detail about the various control structures available in the programming language with suitable examples for each structure.	*13,K2,CO1*
12.	a)	Discuss in detail about various kinds of operators available in C with suitable examples for each.	*13,K2,CO2*
		OR	
	b)	Explain in detail about decision making and looping in C with suitable examples for each.	*13,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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13. a) Explain in detail about linear and binary search with an example program *13,K2,CO3*

OR

b) (i) Write a C program to add two 3X3 matrices. *7,K3,CO3*

(ii) Write a C program for transpose of a matrix *6,K3,CO3*

14. a) Explain different types of function prototypes based on parameters and return types with suitable examples for each. *13,K3,CO4*

OR

b) Explain in detail about recursion concept and write a suitable program to find factorial of n numbers *13,K3,CO4*

15. a) Discuss in detail about Dynamic Memory Allocation with clear examples. *13,K2,CO5*

OR

b) (i) Write a C program to read and print employee's record using structure. *7,K2,CO5*

(ii) Briefly explain about Typedef with suitable example. *6,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Write a program to read content from file and print on the screen. *8,K3,CO6*

(ii) Write a C program to find average of numbers stored in Sequential Access File. *7,K3,CO6*

OR

b) Write a C program to copy content of one file to another file using file operations. *15,K3,CO6*