Question Paper Code	11748

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022 (MARCH 2023)
First Semester
Computer Science and Engineering
(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.	Write an algorithm to check whether the given year is leap year or not.	2,K2,CO1
2.	Differentiate between compiler and interpreter.	2,K2,CO1
3.	Define keyword. Give examples.	2,K1,CO2
4.	Distinguish between while and do-while statements.	2,K2,CO2
5.	Write a program in C to find length of the string using library function.	2,K2,CO3
6.	Define string in C. Give example.	2,K2,CO3
7.	Describe Pointer. Give example.	2,K1,CO5
8.	Recall self-referential structures.	2,K1,CO5
9.	Describe command line arguments.	2,K2,CO6
10.	Distinguish between the functions scanf() and fscanf().	2,K2,CO6

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) (i) Write an algorithm to find roots of quadratic equation. 7,K3,CO1

(ii) Draw a flowchart to find the biggest of three numbers. 6,K2,CO1

OR

b) (i) Explain various phases of Program Development Life cycle with neat diagram. 7,K2,CO1

(ii) Discuss about compiling, linking and loading. 6,K2,CO1

12. a) Explain in detail about various branching statements available in C with suitable examples for each. 13,K2,CO2

OR

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

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b) (i) Write a C Program for arithmetic operations using a switch statement. 7,*K3,CO2*

(ii) Write a C program to print Fibonacci series till 100. 6,*K3,CO2*

13. a) Explain different types of searching techniques with an example program for any one searching technique. 13,*K2,CO3*

OR

b) Explain in detail about string operations with suitable program. 13,*K2,CO3*

14. a) Explain about structure and write a program to create a student structure with structure name as student and structure variables roll no, name, mark1, mark2, mark3, total, avg. Read and print the details of students using structure. 13,*K2,CO5*

OR

b) (i) Describe how the pointer concept works in C to access data for the variables. 6,*K2,CO5*

(ii) Describe how arithmetic operations performed on pointer variables. 7,*K2,CO5*

15. a) Discuss in detail about the various operations performed on file and write a program to read content from the file and print it on the screen. 13,*K2,CO6*

OR

b) Discuss various modes of operations of file and write a C program to copy content of one file to another file using file operations. 13,*K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Write a C program for menu driven scientific calculators using built-in functions. 15,*K3,CO4*

OR

b) (i) Write a C Program to find factorial using recursion. 7,*K3,CO4*

(ii) Write a C Program to swap two numbers using functions. 8,*K3,CO4*