4	M	H	2	3	C	B	0	2	a

M23BPOPS103/203

Maharaja Education Trust (R), Mysuru

MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE

An Autonomous Institute, affiliated Visvesvaraya Technological University, Belagavi

Belawadi, Srirangapatna Taluk, Mandya – 571 477

Approved by AICTE, New Delhi |Recognized by Govt. of Karnataka|

First / Second Semester B.E Degree Examination, July/August-2024

PRINCIPLES OF PROGRAMMING USING C

Duration: **3 hrs** Max. Marks: **100**

Note: 1) Answer any FIVE full question, choosing atleast ONE from each part

2) M: Marks, C: Course outcomes, L: Bloom's Level

Sl. No.	Questions	M	C	L
	Module 1			
1 a)	Explain different generations of Computer.	8	1	L2
b)	Define an Algorithm. Write an algorithm to find whether a number is Even or Odd.	8	3	L3
c)	Explain any two input and output devices.	4	1	L3
	OR			
2 a)	Explain Input and Output statements with their syntax in the C programming language. Write a C program to read the radius and print the area of a circle.	8	1	L2
b)	Write a C program to compute simple interest. Draw the flowchart for the same.	8	3	L3
c)	Define a variable. Explain how variables are declared with syntax in C Programming language.	4	1	L2
	Module 2			
3 a)	Write a C program that reads from the user an arithmetic operator and two operands. Perform the corresponding arithmetic operation on the operands using switch statement.	8	2	L3
b)	Explain Relational and logical operators in detail with example.	6	2	L2
c)	Explain the different types of loops in C with syntax.	6	2	L2
	OR			
4 a)	Write a program in C to Compute the roots of a quadratic equation by accepting the coefficients. Print appropriate messages.	8	2	L3
b)	Identify all conditional control statements used in C. Illustrate the usage of any two of these statements with appropriate syntax and examples.	6	2	L2
c)	Differentiate between Typecasting and Type conversion with example.	6	2	L2
	Module 3			
5 a)	Examine the concept of functions in C programming. Illustrate the syntax for function declaration, function call, and function definition with an example.	8	4	L2
b)	Analyze the concept of arrays in C. Demonstrate with a detailed example how to declare and initialize a one-dimensional array.	6	4	L4
c)	Analyze the different storage classes supported in C programming. Provide a detailed explanation of each storage class along with their syntax.	6	4	L4
	OR			
6 a)	Differentiate between call by value and call by reference with examples.	8	4	L2
b)	Analyze and write the different operations that can be performed on arrays? Describe how to perform each of these operations.	6	4	L4

c)	Analyze the concept of recursion in C programming. Develop a C program that uses a recursive function to generate the Fibonacci series.	6	4	L4
	Module 4			
7a)	Define String and explain how String is declared in C. Discuss different ways of reading and writing a string.	8	4	L2
b)	Explain the following operations using appropriate code snippets in C: a. String Length b. String Copy c. String Concatenation d. String Compare.	8	4	L2
c)	Define Pointer. Show how pointer variables declared and initialized with example.	4	4	L2
	OR			
8 a)	Show the memory representation of array of strings and explain the following with respect to array of strings: a. Array of String Declaration b. Array of String Initialization.	8	4	L2
b)	List any 4 String handling functions in C and explain them with example for each.	8	4	L2
c)	Explain the following with example for each: a. NULL Pointers b. Using pointers as function arguments	4	4	L2
	Module 5			
9 a)	Show how Structure is declared and discuss the importance of typedef with respect to structures.	6	4	L2
b)	Explain the following with respect to structures with example for each: a. Structure variable declaration b. Structure variable initialization c. Accessing members of structures.	6	4	L2
c)	Develop a program to Implement structures to read, write and compute average- marks of the students, list the students scoring above and below the average marks for a class of N students.	8	4	L3
	OR			
10a)	Discuss the following with respect to passing structures to functions as arguments: a. Passing Individual Members b. Passing Entire Structure c. Passing address of the Structure	6	4	L2
b)	Explain the following: a. Nested Structures and Nested Unions b. Array of Structures.	6	4	L2
c)	Develop a program to Implement C Program to find sum, mean and Standard Deviation of real numbers using pointer.	8	4	L3

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