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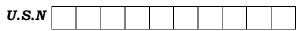
P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Second Semester, B.E. - Semester End Examination; Sep. / Oct. - 2023
Introduction to C Programming
(Common to EC and EE)

Time: 3 hrs   *Max. Marks: 100*

Course Outcomes
The Students will be able to:
CO1: Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
CO2: Apply programming constructs of C language to solve the real world problem.
CO3: Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting.
CO4: Explore user-defined data structures like structures, unions and pointers in implementing solutions.
CO5: Design and Develop Solutions to problems using modular programming constructs using functions.

<u>***Note:***</u> **I) PART - A** *is compulsory.* ***Two*** *marks for each question.*

   II) PART - B: *Answer any* <u>***Two***</u> *sub questions (from a, b, c) for a Maximum of* ***18 marks*** *from each unit.*

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
1 a.	What will be the output of the following C code? char str[ ] = "Too Good"; printf("\n %7s", str);	2	L3	CO2	PO1,2

b.	What is the output of C Program?
	
	 int main( )
	 {
	   int a=10, b, c;
	   b=a++;
	   c=++a;
	   printf("%d %d %d", a, b, c);
	   return 0;
	 }
		2	L3	CO2	PO1,2

c.	What is the output of C Program?
	
	 int main( )
	 {
	   int a[ ] = {1, 2, 3, 4};
	   int b[4] = {5, 6, 7, 8};
	   printf("%d, %d", a[0], b[0]);
	 }
		2	L3	CO3	PO1,2

d.	Give the syntax to read and write two dimensional array.	2	L1	CO3	PO1,2
e.	List any four string manipulation functions.	2	L1	CO3	PO1,2

	II : PART - B	**90**			
	UNIT - I	**18**			
2 a.	Write an algorithm and flowchart to find roots of a quadratic equation.	9	L3	CO2	PO1,2
b.	Write a basic structure of C program and explain its different sections with example program.	9	L2	CO2	PO1,2
c.	Explain with syntax, formatted input and output statement. Write a program to calculate the distance between two points.	9	L2	CO2	PO1,2
	UNIT - II	**18**			
3 a.	List operators in C. Write a program to calculate the total amount of money in the piggybank, given the coins of Rs.10, Rs. 5, Rs. 2 and Rs. 1.	9	L3	CO2	PO1,2
b.	Write syntax for switch statement and explain. Also write a program using switch statement to read month of the year as an integer. Then display the name of the month.	9	L3	CO2	PO1,2
c.	Differentiate between the following with example: i) while and do-while ii) break and continue	9	L2	CO2	PO1,2
	UNIT - III	**18**			
4 a.	Differentiate between call by value and call by reference with example.	9	L2	CO3	PO1,2
b.	Define recursive functions. Write a program to find the sum of n natural numbers series using recursion.	9	L3	CO5	PO1,2
c.	Write a program to search an element in an array using binary search.	9	L3	CO3	PO1,2
	UNIT - IV	**18**			
5 a.	Write a program to input two m x n matrices and then calculate the sum of their corresponding elements and store it in a third m x n matrix.	9	L3	CO3	PO1,2
b.	Write a program to enter n numbers in an array. Redisplay the array with elements being sorted in ascending order using bubble sort.	9	L3	CO3	PO1,2
c.	Explain with example how to read and write strings.	9	L2	CO4	PO1,2
	UNIT - V	**18**			
6 a.	Explain with example the following operations on strings: i) Finding length of string ii) Concatenating two strings to form a new string iii) Comparing two strings	9	L2	CO4	PO1,2
b.	Explain with syntax how to declare a pointer variable. Write a program to print all even numbers from m to n using pointers.	9	L3	CO4	PO1,2
c.	Define structure. Implement structure to read, write and compute average marks and the students scoring above and below the average marks for a class of N students.	9	L3	CO4	PO1,2

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