



First Semester MCA Degree Examination, June/July 2026
Programming and Problem Solving in C

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks, L: Bloom's level, C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Write a note on Applications of C language.	4	L2	CO1
	b.	Explain the basic structures of C program. Write a sample program to demonstrate the components in the structure of C program.	8	L2	CO1
	c.	Explain the following operators in 'C' i) Relational ii) Logical iii) Conditional iv) Bitwise	8	L2	CO1
OR					
Q.2	a.	Explain printf() and scanf() functions in C language with syntax and example.	4	L2	CO1
	b.	Write a C program to simulate simple calculator that performs arithmetic operations using switch statement. Error message should be displayed if any attempt is made to divide by zero.	8	L2	CO1
	c.	Explain the following looping statements with syntax and example program. i) while ii) for iii) do-while	8	L2	CO1
Module – 2					
Q.3	a.	Explain declaration and initialization of single dimension array. Write a C program to implement linear search.	10	L3	CO2
	b.	Write a C program to implement matrix multiplication and validate the rules of multiplication.	10	L3	CO2
OR					
Q.4	a.	Make use of suitable syntax and example explain declaration and initialization of string.	8	L3	CO2
	b.	Develop a C program to implement following given string operations without using built in functions. i) String copy ii) String Concatenate	12	L3	CO2

Module – 3

Q.5	a.	Make use of suitable syntax and example explain function prototype, function definition and function call.	10	L3	CO3
	b.	Develop a C program to implement binary search using recursion.	10	L3	CO3

OR

Q.6	a.	Make use of suitable example explain declaration and initialization of a pointer. Write a C program to swap two numbers using pointers.	10	L3	CO3
	b.	Develop a C program to calculate sum, mean and standard deviation of n array elements using pointer.	10	L3	CO3

Module – 4

Q.7	a.	Make use of suitable example explain nested structures.	10	L3	CO4
	b.	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.	10	L3	CO4

OR

Q.8	a.	Make use of suitable syntax and example explain dynamic memory allocation functions in C.	10	L3	CO4
	b.	Develop a C functions to implement the following operations on singly linked list i) insert_front() ii) delete_end() iii) display()	10	L3	CO4

Module – 5

Q.9	a.	Make use of suitable example explain the steps to be followed in file programming.	10	L3	CO5
	b.	Develop a C program to copy a text file to another, read both the input file name and target file name.	10	L3	CO5

OR

Q.10	a.	Briefly explain sequential access in file programming.	12	L3	CO5
	b.	Make use of suitable example explain command line arguments.	08	L3	CO5
