PAPER ID-311700

Subject Code: KCA102

Roll No: | | | | | | | | | | | | | |

MCA

(SEM I) THEORY EXAMINATION 2023-24

PROBLEM SOLVING USING C

TIME: 3HRS **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

Q no.	Question	Marks
a.	Differentiate between compiler & interpreter.	2
b.	Describe rules of declaring identifiers.	2
c.	Differentiate between actual argument and formal argument.	2
d.	Predict how long the following loop runs? for (int x = 1; x = 3; x++)	2
e.	Write the data structure used in implementing recursion.	2
f.	There is a two-dimensional array of type integer. Write the statement to display the base address of the array.	2
g.	How is a null pointer created?	2

h.	On successful execution of the below code predict the result, if address of variable 'a' is 210?
	void main( )
	{
	float a, *b;
	b = &a;
	b = b+3;
	printf ("%d", b);
	}
		2

i.	Explain the use of rectangle() functions.	2
j.	Though we can write our program without File handling, what is the need of file handling in C?	2

SECTION B

2. Attempt any *three* of the following:

a.	What is the use of a flow chart? List out the symbols used in a flow chart. Draw a flow chart to find whether the given year is a leap year or not.	10
b.	How switch stamen is different from else – if ladder? Construct a program in C to print the bellow pattern. * * * * * * * * * * * * * * * The number of lines to print to be entered by the user.	10
c.	Illustrate the concept of recursion and base condition of recursion. Construct a recursive function to find the factorial of an input number N..	10
d.	How a structure is different from an array? Write a C program to store employee details such as Empid, Name, Salary and Age for 50 employees and display the employee details who are getting salary more than 15000.	10

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e.	Develop a C program to copy the contents of one file to another file. The file name must be pass through command line arguments.	10

SECTION C

3. Attempt any *one* part of the following:

a.	Explain the different data types supported by C language? Explain primitive data types in terms of memory size, format specifier and range.	10
b.	What do you mean by operator precedence and associativity? Explain all bit-wise AND, bit-wise OR and bit-wise XOR operators with suitable example.	10

4. Attempt any *one* part of the following:

a.	Write a program to check the input number is an Armstrong number or not.	10
b.	Identify the use of modular programming? Write a program by using user define function to check given number is prime or not. Porotype of function should be like this **int is_prime(int).**	10

5. Attempt any *one* part of the following:

a.	Illustrate the different ways to initialize a string during compile time as well as during run time. Write a program to count the number of words and number of characters in an input string.	10
b.	Define a pointer. How do you declare and initialize a pointer? Write a program to add the contents of an integer array using pointer.	10

6. Attempt any *one* part of the following:

a.	Define scope, visibility, and lifetime of a variable. Explain in detail about all storage classes supported in C language with reference to scope and lifetime, visibility, and default value.	10
b.	How a structure is different from union? Discuss the concept of nested structure. Write a program for your illustration.	10

7. Attempt any *one* part of the following:

a.	What are the drawbacks of static memory allocation? Write a program to allocate space dynamically to store N numbers. Find the sum and average of these numbers.	10
b.	What is the use of initgraph() function? Write a program to display 50 concentric circles.	10