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

MCA
(SEM I) THEORY EXAMINATION 2021-22
PROBLEM SOLVING USING C

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

Qno.	Question	Marks	CO
a.	Differentiate between compiler & interpreter.	2	1
b.	How keywords are different from identifiers?	2	1
c.	Differentiate between actual argument and formal argument.	2	2
d.	Determine the value of the following logical expressions if a=5, b=10 i. a > b && a<b ii. a>b && a>b	2	2

e.	What will be the output of the code?
	void main()
	{
	int a,b *p;
	a = 10; p=&a; b = *p+20;
	printf("%d", b);
	}
		2	3

f.	An array is declared as int a [100]; If the base address of the array is 5000, what will be the address of a[59]. (Consider 16 bit machine architecture).	2	3
g.	How a structure is different from union?	2	4
h.	Differentiate between dot operator and -> operator to access structure objects.	2	4
i.	Explain the statement fseek (fp, m, 1).	2	5
j.	Illustrate the function feof().	2	5

SECTION B

2. Attempt any *three* of the following: 3x10 =30

Qno.	Question	Marks	CO
a.	Define algorithm and explain the characteristics of Algorithm. Write an algorithm to find the roots of a quadratic equation.	10	1
b.	How entry-controlled loop is different from exit-controlled loop? Write a program to print the pattern 1 2 3 4 5 6 7 8 9 10	10	2
c.	What do you mean by function prototype? How call by value is different from call by reference? Illustrate call by reference with a suitable example.	10	3
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 same for the users.	10	4
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	5

SECTION C

3. Attempt any *one* part of the following: 1x10 =10

Qno.	Question	Marks	CO
a.	What is the use of flow charts? Explain the symbols used in a flowchart. Draw a flowchart to find the maximum among three input numbers.	10	1

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b.	What do you mean by operator precedence and associativity? Explain all bit-wise operators with suitable example.	10	1

4. Attempt any *one* part of the following: 1x10 =10

Qno.	Question	Marks	CO
a.	Give the syntax and explain the working of switch-case statement. Write a program to implement the menus based basic calculator using switch case	10	2
b.	Identify the use of modular programming?Write a program by using user define function to check given number is prime or not.	10	2

5. Attempt any *one* part of the following: 1x10 =10

Qno.	Question	Marks	CO
a.	Illustrate the different ways to input a string in C language. Write a program to count the number of words and number of characters in an input string.	10	3
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	3

6. Attempt any *one* part of the following: 1x10 =10

Qno.	Question	Marks	CO
a.	Define scope and lifetime of a variable. Explain in detail about all storage classes supported in C language with reference to scope and lifetime.	10	4
b.	How a structure is different from union? Write a program to store 50 players' details such as Player Name, Country Name and batting average. Using the database Display the details of the players who are playing for a given country .	10	4

7. Attempt any *one* part of the following: 1x10 =10

Qno.	Question	Marks	CO
a.	What are the drawbacks of static memory allocation? Explain the functions available in C language to allocate memory dynamically.	10	5
b.	Explain the following graphics functions supported by C language i. initgraph() ii. rectangle() iii. outtextxy() iv. line() v. setbgcolor()	10	5