

INTERNATIONAL CENTRE FOR APPLIED SCIENCES MAHE, MANIPAL B.Sc. (Applied Sciences) in Engg. End – Semester Theory Examinations – Nov./ Dec. 2020 I SEMESTER – PROBLEM SOLVING USING COMPUTERS (ICS 111) (Branch: Common to all)

Time: 3 Hours	Date: 26 November 2020	Max. Marks: 50
 ✓ Answer ALL the questions. ✓ Missing data, if any, may be suitably assumed 		
1A. Define following:		
i) Cache me	mory	
ii) Literals		

1B. Draw the flowchart to find Fibonacci series up to a given limit.

(5M + 5M)

2A. Write an algorithm to find all kinds of roots of a quadratic equation.

2B. Evaluate the code/expression :

i)
$$(25/4) \% 2$$

ii) int I,j,k;
 $I=j=k=5;$
 $cout<
iii) int x,y,z;$

- iv) int a=5; int b=15; cout<< (a | b);
- v) int i=5; while(i > 1); i++; cout<<i;</pre>

(5M + 5M)

3A. . What is a pointer? Write complete C++ program to display 1D array elements with the help of a pointer.

3B. Differentiate between exit controlled and entry controlled loop with the help of flowchart and example code snippet.

(4M + 6M)

4A. Illustrate sorting of data list { 11, 2, 69,15, 10 } using bubble sort algorithm. Show all the steps clearly.

4B. Define Student structure with name, roll-number and CGPA as it's data members . Declare an array to hold n Students' record. Display the array in the sorted order on the basis of CGPA. Write Complete C++ program to demonstrate the same.

(5M +5M)

5A. Write a complete C++ program to multiply two 2D matrices. Program should have code to check for multiplication rule.

5B. Write a function fact() to find the factorial of a given number. Using this function, compute NCR in the main function.

(5M + 5M)
