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**INTERNATIONAL CENTRE FOR APPLIED SCIENCES
MAHE, MANIPAL**

B.Sc. (Applied Sciences) in Engg.

End – Semester Theory Examinations – NOV 2021

I SEMESTER - INTRODUCTION TO COMPUTERS & PROGRAMMING (ICS111)

Time: 3 Hours

Date: 27 NOV 2021

Max. Marks: 50

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- ✓ Answer ALL questions.
 - ✓ Missing data, if any, may be suitably assumed.
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1A. Briefly describe Cache Memory. How does it help to improve the speed of CPU.
1B. Draw the flowchart to print first N natural numbers.
1C. Write a complete C++ program using switch to display the appropriate grade dependent on Index, as per the following criteria:
Index : 10, 9, 8 – Grade A
Index : 7,6 – Grade B
Index : 5 – Grade C
Default grade is D.

(2M +4M +4M)

2A. Write an algorithm to find all kinds of roots of a quadratic equation.
2B. Write short notes on: (syntax and example code)
i) Data types in C++
ii) Pointers

(5M +2.5M +2.5M)

3A. Evaluate the code/expression :

i) (- 25/3) %2.0

**ii) int x, y, z;
x=5;
y=5;
z= x + y - - ;
cout<<z;**

**iii) int a=15;
int b=5;
(a>b) ? cout<<a : cout<<b;**

**iv) int i=5;
while(i > 1);
i++;**

cout<<i;

3B. What are the differences between entry control and exit control loop? [Write any three differences with example code.]

(4M +6M)

4A. Illustrate bubble sort for data list { 9, 3, 5, 1, 6 }. Show all the steps clearly.

4B. . Define the following with the help of prototype and example code:

i) strcpy() ii) strcmp()

(5M + 5M)

5A. Define Employee structure with name, ID and salary as it's data members. Create two Employee variables in main() and input the data into these variables from user and display the data on output screen.

5B. What is an inline function? Write a complete C++ program to explain the inline function.

(5M+5M)

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