

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015**

(CUCSS)

Maths

MT4E07—COMPUTER ORIENTED NUMERICAL ANALYSIS

Time : One Hour and a Half

Maximum : 18 Weightage

**Part A (Short Answer Questions)***Answer **all** questions.**Each question carries a weightage of 1.*

1. Write a note on floating point constants.
2. Write C++ program that uses for loop.
3. Write a C++ program for finding the minimum of two numbers.
4. Write a C++ program for checking whether the given positive integer is an even number.
5. Write a C++ program for checking whether the given positive integer is a prime.
6. Write the Simpson's algorithm for integrating a tabulated function.

(6 x 1 = 6 weightage)

**Part B***Answer any **four** questions.**Each question carries a weightage of 2.*

7. Write a C++ program that generates the following table :

2010	575
2011	1135
2012	870
2013	10045

8. Write a C++ program that illustrates the averaging of array elements.
9. Write an algorithm for generating Fibonacci numbers less than or equal to 100.
10. Write a C++ program to interpolate using the given pairs of values of  $x$  and  $y$  by Newton's forward difference formula.

11. Write a C++ program to evaluate  $\int_a^b f(x) dx$  using Trapezoidal rule.

12. Write a C++ program to evaluate the inverse of a 3 x 3 matrix using Gauss elimination technique.

(4 x 2 = 8 weightage)

**Turn over**

## Part C

Answer any **one** question.  
The question carries a weightage of 4.

13. Write a C++ program that counts the number of words and the number of characters in a phrase typed by the user. 3 WS,
14. Write a computer oriented algorithm and the corresponding C++ program to solve the differential equation  $\frac{dy}{dx} = f(x, y)$ ,  $y(x_0) = y_0$  by using Range-Kutta method. 10

( 1 x 4 = 4 weightage)

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W

10