FOURTH SEMESTER M. Sc. DEGREE EXAMINATION, APRIL 2024
(Regular/Improvement/Supplementary)

MATHEMATICS
FMTH4E12- COMPUTER ORIENTED NUMERICAL ANALYSIS

Time : $1\frac{1}{2}$ Hours.   Maximum Weightage: 15

Section A
Answer ALL questions. Each carries 1 weightage.

1. Explain the role of the statement "#include <iostream.h>" in a C++ program.

2. Explain, with a suitable example, the difference (if any) between "=" and "= ="

   in a C++ program.

3. Write the syntax of "IF" statement in C++ with one example.

4. Explain with an example the difference (if any) between "getch()" and "getche()" in a C++

   program.

(4×1= 4 weightage)

Section B

Answer any ONE question from each unit. Each carries 2 weightage.

UNIT I

5. Write a simple C++ program showing the use of (any two) logical operators.

6. Write a C++ program to input the entries of a matrix and to get its transpose as the output.

UNIT II

7. Write a C++ program to explain the effect of any three of the escape sequences.

(P.T.O.)

8. Write a C++ program to determine the factorial of a natural number that you input. The program must have proper comments, specification of the variables used etc. and must be complete in all respects.

UNIT III

9. Write the problem, its explanation and the algorithm for the Newton Raphson method.

10. Explain the Bisection Method and write the apropriate algorithm.

(3×2= 6 weightage)

Section C

Answer any ONE question. Each question carries 5 weightage.

11. a) Explain the problem, the method and the algorithm for Lagrange's interpolation.

    b) Write a C++ Program for Part (a) with suitable comments.

12. Explain the problem, the method, the algorithm and a C++ program to find the inverse of a matrix. The entries are to be input at the time of running the program.

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(1×5 = 5 weightage)