

M.Sc. (Maths) Semester - 3 (CBCS) Examination**DEC/JAN. - 2020****Prog. In C & Numerical Methods (Core)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Que – 1

- (a) Answer following both questions. [4]
- (i) Write down at least four names of C-Tokens.
 - (ii) Write a program which can print 1 to 30 integers in three lines.
- (b) Answer any two from followings. [10]
- (i) Write a note about importance of C – Language.
 - (ii) Write a program, which can read two integers m and n. Also it can find the value of GCD (m, n) and LCM [m, n] of given two integers.
 - (iii) Explain about for loop statement with its format and a suitable example.

Que – 2

- (a) Answer following both questions. [4]
- (i) Draw flow chart, so that one can write a program which can print letters 'A' to 'Z'.
 - (ii) Give definition of flow-chart.
- (b) Answer any two from followings. [10]
- (i) Discuss about False Position Method
 - (ii) Write a program for the False Position Method.
 - (iii) Explain about Gauss – Elimination Method.

Que – 3

- (a) Answer following both questions. [4]
- (i) Define terms: Compiler and Higher Level Language.
 - (ii) Give definitions: Identifier and Variable.
- (b) Answer any two from followings. [10]
- (i) Using Gauss – Elimination Method, solve following system of four linearly independent equations of four variables.
$$x_1 + x_2 + x_3 + x_4 = 5, 2x_1 + 3x_2 + 4x_3 + 5x_4 = 15, x_1 + x_2 + 4x_3 + 5x_4 = 10, x_1 + 4x_2 + 16x_3 + 64x_4 = -7.$$
 - (ii) Write down a program which can display all the primes which are less than 542.
 - (iii) Find a root of the equation, $f(x) = x \cdot e^x - 2$, using Bisection Method.

Que – 4

- (a) Answer following both questions. [4]
- (i) Write down format and syntax for if else statement.
 - (ii) Write down format and syntax for simple if statement.
- (b) Answer any two from followings. [10]
- (i) Write a program which can display tables of 1 to 10.
 - (ii) Explain about Secant Method and also compute the order of convergence for this method.
 - (iii) Write a program which can read two square matrices A, B of order n and it can print the matrices $A + B$, $A * B$.

Que – 5

- (a) Answer following both questions. [4]
- (i) Write down format for jump in a loop statement by break.
 - (ii) Write down order of convergence of Bisection Method and Newton Raphson Method.
- (b) Answer any two from followings. [10]
- (i) Explain about Switch statement with its format/syntax and appropriate example.
 - (ii) Explain about N-G Forward interpolation polynomial.
 - (iii) Write down the program for the method of Lagrange Interpolation Polynomial.
