UG–C–2353 BCM–01X

U.G. DEGREE EXAMINATION — DECEMBER 2023

Computer Science

First Year

MATHEMATICS

Time : 3 hours Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in 100 words.

All questions carry equal marks.

1. What is Symmetric function?.

2. Define Algebraic education.

3. What is set?

4. Define Alphabet.

5. What is Relation?

PART B — $(3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Find a real root of the equation $x^3 - 3x + 1 = 0$ lying between 1 and 2 correct to three places of decimal by using Bisection method.

7. How the numbers are represented in floating point form?

8. Describe the Bisection method.

9. Explain Sets and its description.

10. Discuss about operations Expression.

PART C — $(4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Give Bisection iterative formula with example.

12. Solve the following system of equations by using Jacobi method

$$3x - y + z = 1$$
$$3x + 6y + 2z = 0$$
$$3x + 3y + 7z = 4$$

13. Determine the root of $xe^x - 3 = 0$ correct to three decimal places, using the Method of false position.

14. Solve, by Gaussian Elimination procedure, the equations:

$$3.15x - 1.96y + 3.85z = 12.95$$
$$2.13x + 5.12y - 2.89z - 8.61$$
$$5.92x + 3.05y + 2.15z = 6.88$$

15. Explain Non-deterministic Finite Automata with example.

16. Give Newton raphson iterative formula with example.

17. Discuss about the Invertible and composition of functions.

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