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SRINIX COLLEGE OF ENGINEERING

1ST INTERNAL EXAMINATION-2020-21

Sub – Math-III

Branch - All

Full marks- 60

Time – 2.00 hrs

1. Answer all questions (Part – A)

(2 x 6 =12)

- What is the Interpolation?
- What is the rate of convergence of secant method ?
- What is Diagonally Dominant matrix ?
- What is the Interactive method ?
- Find third approximate value of root of equation $x^3 - 3x + 1 = 0$ by bisection method ?
- What is the trapezoidal formula ?

2. Answer all questions (Part – B)

(6 x 8 = 48)

- a) Solve by Doolittle's method the system of equation

$$2x_1 + 3x_2 + x_3 = 9$$

$$x_1 + 2x_2 + 3x_3 = 6$$

$$3x_1 + x_2 + 2x_3 = 8$$

- b) Solve by Crout's method the system of equation

$$x_1 + 2x_2 + 3x_3 = 14$$

$$2x_1 + 5x_2 + 2x_3 = 18$$

$$3x_1 + 2x_2 + 5x_3 = 22$$

- c) Solve by Cholesky's method

$$4x_1 + 10x_2 + 8x_3 = 44$$

$$10x_1 + 26x_2 + 26x_3 = 128$$

$$8x_1 + 26x_2 + 61x_3 = 214$$

- d) Finding the square root of 5 using fixed point iteration method (correct up to two decimal places)
- e) Using Gauss seidel method solve the following

$$10x_1 + x_2 + x_3 = 12$$

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$$x_1 + x_2 + 10x_3 = 12$$

- f) Construct Newton Forward Interpolation formula from given table to evaluate $f(5)$

x	0	2	4	6	8
y	5	9	61	209	501

- g) Evaluate $f(3)$ by using Newton Backward Interpolation formula from given table

x	3	4	5	6
y	6	24	60	120

- h) Evaluate approximately the integral $I(f) = \int_0^1 (1/1+x) dx$ by 1 – point , 2 – point and 3 – point Gauss-Legendre rules.