JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Sc (Maths and Computing)-III Semester

COURSE CODE (CREDITS):24BS1MA311(3)                    MAX. MARKS: 15

COURSE NAME: Introduction to Numerical Computing

COURSE INSTRUCTOR: Dr.Neel Kanth                       MAX. TIME: 1 Hour

*Note: (a)All questions are compulsory.*

*(b)Marks are indicated against each question in square brackets.*

*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

Q1.The number $x = 0.458529$ is round off to three decimal places. Find absolute, relative and percentage error.                                             [3][CO1]

Q2.Find the positive root of equation $x^3 - 5x + 3 = 0$ correct to three decimal places using Bisection method. The root of the equation lies between 0 and 1.          [3][CO1]

Q3. Find the positive root of equation $x^3 - x - 4 = 0$ correct to four decimal places using Regula-Falsi method. The root of the equation lies between 1 and 2.          [3][CO1]

Q4.Find the positive square root of 13 using Newton Raphson method correct to 4 decimal places.                                                                [3][CO1]

Q5.Solve the system of linear equations using Gauss elimination method.     [3][CO2]

$$\begin{bmatrix} 2 & -3 & 1 \\ 1 & -1 & 2 \\ 2 & 1 & -3 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} -2 \\ 3 \\ -2 \end{bmatrix}$$