JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

Ph.D (Mathematics)

COURSE CODE (CREDITS):17P1WMA113 (03) MAX. MARKS: 15

COURSE NAME: Advanced Numerical Analysis

COURSE INSTRUCTORS: 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

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Q1.If $x = 0.005998$, find the absolute, relative and percentage error if x is rounded off to three decimal places. [3]

Q2.Find the root of the equation $\cos x - xe^x = 0$ correct to three decimal places using false position method. Given that root of the equation lies between 0.5 and 1 [5]

Q3.Show that rate of convergence of Newton-Raphson method is quadratic. [3]

Q4.Evaluate $\sqrt{12}$ correct to three decimal places using Newton-Raphson method. [4]