In–Course Assessment Examination-1
CSC 2234(P) – Numerical Computing(P)
Applied Mathematics and Computing
Second Semester – Academic Year 2021/2022
Department of Physical Science
University of Vavuniya

Time Allowed: One hour 22– April – 2025

Instructions:

- *Create a directory on the desktop with your registration number, take screenshots of the outputs, and save them as word files in your directory.*
- *In each program file, the first line must be a comment with your registration number.*

1. Apply False Position Method to accurately identify the roots of the following functions:
    a. $f(x) = e^{-x} - x = 0$ within the interval [0, 1]
    b. $f(x) = \tan(x) - x = 0$ within the interval [4.4, 4.6]

    Ensure a high precision with a tolerance level of 10^{-6}.

2. Use the Newton-Raphson Method to find a root of the following functions:
    a. $f(x) = x^x - 10 = 0$, with $x_0 = 2.0$
    b. $f(x) = \cos(x) - x = 0$, with $x_0 = 0.5$

    Ensure a tolerance of 10^{-6}.