Jadavpur University
Session 2021-2022, Odd Semester
Computer Programming and Numerical Methods

1. Write a menu-driven program for finding roots of a nonlinear equation using Bisection, Regula Falsi and Newton-Raphson method.

2. Use the above program to find 3 roots of the equation xtan(x)=c where c is a user-input constant. Use both the bisection method and Newton-Raphson method.

3. There are three real roots of the equation $x^3 – 2.5x^2 – 2.46x + 3.96 = 0$ in the domain [-4, +4]. Write a program to first find out the disjoint subintervals in the given domain those cover the roots. Hence find the roots by Newton-Raphson method.