Ahsanullah University of Science and Technology
Department of CSE
CSE2201: Numerical Methods
Practice Problems on System of Non-linear Equations
Total Marks: 35

1. Evaluate the polynomial $f(x) = 5x^5 + 4x^4 + 3x^3 + 2x^2 + x + 12$ by Horner's Method at x = 1.5. [5]

2. Use Fixed Point Iteration Method to evaluate: $f(x) = x^3 + 2x^2 + x = 1$, correct to four significant figures. [5]

3. Use Bisection Method to evaluate for: $f(x) = x^3 + x^2 + x + 7$
   (a) EPS = 0.05, [5]
   (b) EPS = 0.001 and compare the result. [5]

4. Use False Position Method to evaluate $f(x) = x^3 - x^2 - 7$ correct to: 2 decimal places. [5]

5. Use Newton Raphson Method and Secant Method to evaluate following function , correct to 3 decimal places and also draw the graphs of their convergence. [10]
$$f(x) = x + logx - 2$$