



Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Examination, Fall-2023

Course Code: CSE235, Course Title: Numerical Methods

Level: 2 Term: 2 Batch: 61

Time: 1 Hour and 30 Minutes

Marks: 25

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1. a) Discuss the real life applications of numerical methods. [2] CO1
b) Calculate the absolute, relative and percentage errors of the number 8.6 if both of its digits are correct. [2] CO1
2. a) Solve the following system of equation $x^3 + 2x^2 + x - 1 = 0$ by False Position method correct to three decimal places. [5] CO2
3. a) Apply Newton-Raphson method to find the positive root of the equation $x^2 - 4x - 10 = 0$ by correct to three decimal places. [5] CO2
4. a) In a company the number of persons whose daily wage are as follows: [6] CO3

Daily wage in Tk.	20	40	60	80	100
No. of persons	120	265	465	715	865

Estimate the number of persons using Newton Forward interpolation method whose daily wage is between TK. 40 and TK.50

5. a) Evaluate the value of $f(x)$ at $x=0$ using Lagrange interpolation method from the following table [5] CO3

x	-2	1	3	7
f(x)	5	7	11	34