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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