ourdiu.com | Shared by Robiul Karim Jesan

Daffodil International University

Faculty of Science & Information Technology (FSIT)
Department of Computer Science and Engineering
Midterm Examination, Fall 2024
Course Code: CSE 226, Course Title: Numerical Methods
Level-2, Term-2
Batch-64

Time: 01:30 Hours **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)*	**Indicate** Five uses of Numerical Methods in Computer Science.	[2]	CO1
	b)	**Interpret** the value of $\sqrt{301} + \sqrt{157} + \sqrt{91} + \sqrt{217}$ to 5 significant digits and find its **Absolute, Relative and Percentage Error.**	[3]	
2	*a)*	**Identify** the approximate root of, $4\sin x - e^x = 0$ lies between (0, 1) using the Method of **False Position** correct up to Four Decimal Places.	[5]	CO2
	b)	**Solve** the algebraic equation, $x^3 - 2x^2 - 4 = 0$ using The **Newton Raphson Method** correct up to Five Decimal Places.	[5]	
3	*a)*	The table gives the distance in nautical miles of the visible horizon for the given heights in feet above the earth's surface: **x (height)** 100 150 200 250 300 350 400 **y (distance)** 10 13 15 16 18 19 21 **Evaluate** the difference table to **find the distance** when the height is **170.**	[5]	CO3
	b)	**Estimate** the value of, f (x) at x = 8, from the given table by using **Lagrange's Interpolation**: **x** 3 7 9 10 12 **f(x)** 35 51 62 67 77	[5]	

Good Luck!!!