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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Spring 2026
Course Code: CSE226, Course Title: Numerical Methods
Level: 2 Term: 3, Batch: 66

Time: 1:30 hrs. **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) Identify the number of significant digits of 10000, 12.000300,0.00025, and 2.0005	2	CO1
	(b) Explain E_A, E_R, and E_P, after finding the sum of $\sqrt{11}+\sqrt{21}+\sqrt{31}$ correct to 5 significant digits.	3	
2.	(a) Apply Bisection method to find a real root of $x^2+4\sin x=0$ that lies on (-2,-1)	5	CO2
	(b) Apply Newton-Raphson method to find a real root of $x^3+x^2-1=0$ belonging in (0,1)	5	
3.	(a) The population of a village in the last six censuses was recorded as follows:	5	CO3

Year (x)	1941	1951	1961	1971	1981	1991
Population (y)	2500	2800	3200	3700	4350	5225

Determine the population for the year 1945

(b) A polynomial passes through the given set of points, determine the polynomial.				5

x	0	1	2	5
$f(x)$	2	3	12	147