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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Summer 2026
Course Code: CSE226, Course Title: Numerical Methods
Level: 2 Term: 3, Batch: 67

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 1.0×10^{-6}, 0.000550, 010.002 and 20.0000 along with the necessary conditions of being significant digits.	2	CO1
	(b) Solve $S=\sqrt{11}+\sqrt{7}+\sqrt{5}+\sqrt{3}$ to 6 significant digits along with the E_A, E_R and E_P.	3	
2.	(a) Apply false position method to find a real root of $e^x-4x^2=0$ that lies on (0,1) correct to 4 decimal places.	5	CO2
	(b) Apply fixed point iteration method to find a real root of $\cos x-3x+3=0$ belonging in (1,2) correct to 5 significant digits.	5	
3.	(a) The population of a town in the last six censuses was recorded as follows:	5	CO3

Year (x)	1911	1921	1931	1941	1951	1961
Population in thousands (y)	12	15	20	27	39	52

Determine the population for the year 1946.

(b) A polynomial passes through the following set of points:				5

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

Determine the polynomial using Lagrange's formula.