Final Term Examination – **Bologna Process**

(2021 - 2022)

College of Engineering

Department of **Elec. & Electronics** Engineering Subject: Mathematic IV

Date: 19 / 01 / 2022 Time allowed: 2.0 hr.

Lecture: Dr.Ahmed Mamoon

Q1	Consider the following matrix: $A = \begin{vmatrix} 0 & 1 \\ 1 & 0 \end{vmatrix}$	Mark	25
	Compute $A^{47} - A^{20}$ using only diagonalization		
Q2	For the below function: $1.f(t) = 7t + 6e^{t} - 2e^{-t} - 10$ $2.f(t) = te^{at} \sinh t$	Mark	25
	Find the Laplace transform of each		
Q3	Solve the Following Systems of Linear Equations using Gauss Elimination $14x - 2y - 4z = 0$ $18x - 2y - 6z = 0$ $4x + 8y - 14z = 0$	Mark	25
Q4	Find the complete solution for the following differential Equation $(D^3-2D+4)y=x^2+3x^2-5x+2$	Mark	25

GOOD LUCK