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Daffodil International University

Dept. of Electrical and Electronic Engineering (SUMMER 26)

Quiz: 2

Course Code: 0541-113 Course Title: Linear Algebra and Complex Variable

Section: E Set-1 Time: 30 minutes Marks: 15

1. Find the inverse o $A = \begin{pmatrix} -1 & 0 & 3 \\ 3 & 2 & 2 \\ 4 & 0 & -1 \end{pmatrix}$ using block matrix.

2. An Electrical Engineering student is analyzing a DC circuit containing five parallel branches. The currents flowing through the branches are I_1, I_2, I_3, I_4 and I_5 amperes.

Using Kirchhoff's Current Law (KCL) and circuit measurements, the following system of linear equations is obtained:

$$I_1 + I_2 + 2I_3 + I_4 + I_5 = 5$$
$$2I_1 + 5I_2 - 3I_3 + 2I_4 = 3$$
$$4I_1 + 5I_2 + 3I_3 + 2I_5 = 7$$

Find out whether the system is consistent or not. In case of consistency find the values of I_1, I_2, I_3, I_4 and I_5.