



ISRA UNIVERSITY

Islamabad Campus

Department of Electrical Engineering

Program: B.E. (Electrical)

Semester – Summer 2016

EL-322 Digital Signal Processing

Assignment – 1

Marks: 20

Due Date: 28/07/2016

Handout Date: 21/07/2016

Question # 1:

Solve the linear system by Gauss-Jordan elimination:

$$\begin{aligned}x - y + 2z - w &= -1 \\2x + y - 2z - 2w &= -2 \\-x + 2y - 4z + w &= 1 \\3x &\quad - 3w = -3\end{aligned}$$

Question # 2:

Use the given information to find A:

$$(I + 2A)^{-1} = \begin{bmatrix} -1 & 2 \\ 4 & 5 \end{bmatrix}$$

Question # 3:

Use the inversion algorithm to find the inverse of the given matrix, if the inverse exists:

$$\begin{bmatrix} -1 & 3 & -4 \\ 2 & 4 & 1 \\ -4 & 2 & -9 \end{bmatrix}$$

Question # 4:

Find all values of the unknown constant (s) in order for A to be symmetric:

- $A = \begin{bmatrix} 4 & -3 \\ a + 5 & -1 \end{bmatrix}$
- $A = \begin{bmatrix} x - 1 & x^2 & x^4 \\ 0 & x + 2 & x^3 \\ 0 & 0 & x - 4 \end{bmatrix}$

Good Luck