31. The product $[A][A]^{-1}$ of a nonsingular matrix $[A]$ and its inverse $[A]^{-1}$ is
(1) the null matrix [0].
(2) the unit matrix $[U]$.
(3) the inverse matrix $[A]^{-1}$.
(4) the matrix $[A]$.

32. The solution for $[I]$ in the matrix equation $[Z][I] = [V]$ is
(1) $[I] = [V]$.
(2) $[I] = [V]^{-1}[Z]$.
(3) $[I] = [V][Z]^{-1}$.
(4) $[I] = [Z]^{-1}[V]$.

33. The admittance matrix is
(1) the transpose of the impedance matrix.
(2) the adjoint of the impedance matrix.
(3) the inverse of the impedance matrix.
(4) the inverse of the current matrix.

34. What is the current matrix obtained by solving the following set of simultaneous equations?

$$3I_1 + 4I_2 = 24$$
$$I_1 + I_2 = 7$$

(1) $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = -\begin{bmatrix} -4 \\ -3 \end{bmatrix}$

(2) $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = -\begin{bmatrix} 24 \\ 7 \end{bmatrix}$

(3) $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} 1 & -4 \\ -1 & 3 \end{bmatrix}$

(4) $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} -4 \\ -3 \end{bmatrix}$

35. The values of I_1 and I_2 from Question 34 are
(1) $I_1 = -4, I_2 = -3$.
(2) $I_1 = -4, I_2 = 3$.
(3) $I_1 = 4, I_2 = -3$.
(4) $I_1 = 4, I_2 = 3$.

36. Find the impedance matrix of the circuit in Fig. 24.

(1) $[Z] = \begin{bmatrix} 2.475 & -0.85 \\ -0.85 & 2.1 \end{bmatrix}$

(2) $[Z] = \begin{bmatrix} 6.1 & 2.6 \\ 2.6 & 4.6 \end{bmatrix}$

(3) $[Z] = \begin{bmatrix} 2.475 & 0.35 \\ 0.35 & 0.5 \end{bmatrix}$

(4) $[Z] = \begin{bmatrix} 9.6 & 5.6 \\ 5.4 & 6.0 \end{bmatrix}$