

Assignment No 4 (BCS-A,B,C)

Deadline Monday 07-06-23

Question 1: Find a 3×3 matrix A whose eigenvalues are $1, -2$ and -2 and associated eigenvectors are $\begin{bmatrix} 1 \\ -1 \\ 1 \end{bmatrix}, \begin{bmatrix} -1 \\ 1 \\ 0 \end{bmatrix}$ and $\begin{bmatrix} -1 \\ 0 \\ 1 \end{bmatrix}$, respectively.

Question 2: Find the eigenvalues and eigenvectors of matrix A . Is matrix A diagonalizable or not?

$$A = \begin{bmatrix} 1 & 3 & 3 \\ -3 & -5 & -3 \\ 3 & 3 & 1 \end{bmatrix}$$