

### Quiz-29

Q.1 If the eigenvalues of the matrix A are 2, 3 then write the eigenvalues of  $A^{-1}$ .

A.  $1/\sqrt{2}, 1/\sqrt{3}$

B.  $\sqrt{2}, \sqrt{3}$

C.  $1/2, 1/3$

D. None of these

Q.2 If the eigenvalues of the matrix A are 4, 5 then write the eigenvalues of the matrix  $A - 2I$ .

A. 2,3   B. 4,5   C. 4,0   D. 0,5

Q.3 If A has eigenvalues 1, 2, 4, then what is the trace of  $A^2$ .

A. 7   B. 8   C. 21   D. 64

Q.4 Find the diagonalized matrix of the matrix  $A = \begin{bmatrix} 1 & -1 \\ 2 & 4 \end{bmatrix}$ .

A.  $\begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$

B.  $\begin{bmatrix} 1 & 0 \\ 0 & 4 \end{bmatrix}$

C.  $\begin{bmatrix} 0 & 0 \\ 0 & 5 \end{bmatrix}$

D. None of these

Q.5 Find the matrix A whose eigenvalues are 1 and 4, and whose eigenvectors are (3,1) and (2,1) respectively.

A.  $\begin{bmatrix} 5 & 18 \\ -3 & 10 \end{bmatrix}$

B.  $\begin{bmatrix} -5 & 18 \\ -3 & 10 \end{bmatrix}$

C.  $\begin{bmatrix} 5 & 18 \\ 3 & 10 \end{bmatrix}$

D. None of these