Practice Questions
MTH105

Q1 Two of the eigen values of 3×3 matrix, which determinant equals 4 are -1 and 2. Then third eigen value of matrix is equal to

(a) -2
(b) -1
(c) 1
(d) 2

Q2 The matrix A is defined as $A = \begin{bmatrix} -1 & 0 & 0 \\ 2 & -3 & 0 \\ 1 & 4 & 2 \end{bmatrix}$

The eigen values of $A^2$ are

(a) -1, -9, -4
(b) 1, 9, 4
(c) -1, -3, 2
(d) 1, 3, -2

Q3 The matrix $A = \begin{bmatrix} -1 & 2 & 3 \\ 0 & 3 & 5 \\ 0 & 0 & -2 \end{bmatrix}$ the eigen values of $A^3 + 5A + 8I$ are

(a) -1, 27, -8
(b) -1, 3, -2
(c) 2, 50, -10
(d) 2, 50, 10

Q4 The matrix A has eigen value 'i' then $A^{-1} - 2I + A$ has eigen value

(a) $1 + 2i + i^2$
(b) $\frac{1}{i} - 2 + i$
(c) $1 - 2i + i^2$
(d) $1 - 2 + \frac{1}{i}$ $\quad i \quad i^2$

Practice Questions (MTH-165)

Q1 If the eigen values of a matrix A are 1, -2, 3. Then eigen values of $3I - 2A + A^2$ are

(a) 2, 11, 6
(b) 3, 11, 18
(c) 2, 3, 6
(d) 6, 3, 11

Q1 Rank of the diagonal matrix

$$\begin{bmatrix} -1 & & & \\ & 0 & & \\ & & 1 & \\ & & & 4 \end{bmatrix}$$ is

(a) 1
(b) 2
(c) 3
(d) 4

Q1 Rank of matrix $\begin{bmatrix} 2 & -4 & 6 \\ -1 & 2 & -3 \\ 3 & -6 & 9 \end{bmatrix}$ is

(a) 3
(b) 2
(c) 0
(d) 1

Q1 The rank of matrix $\begin{bmatrix} 4 & -1 & 0 \\ 0 & 4 & -1 \\ -1 & 0 & 4 \end{bmatrix}$ is 2, for 4 equals

(a) any row number
(b) 3
(c) 1
(d) 2