

Q1 Rank of $\begin{bmatrix} 4 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 5 \end{bmatrix}$ is

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

Q1 which of the following set of vectors is Linear dependent?

- (a) $(1, -1, 1), (2, 1, 1), (3, 0, 2)$
- (b) $(3, 1, -4), (2, 2, -3), (0, -4, 1)$
- (c) $(2, 2, 1), (1, 3, 1), (1, 2, 2)$
- (d) All of the above.

Q1 $A = \begin{bmatrix} 1 & 2 & -3 \\ 0 & 3 & 2 \\ 0 & 0 & -2 \end{bmatrix}$

Eigen values of $3A^3 + 5A^2 - 6A + 2I$ are

- (a) 4, 5, 7
- (b) 4, 11, 7
- (c) 4, 11, 8
- (d) 4, 11, 10

Q1 If $\lambda_1, \lambda_2, \dots, \lambda_n$ are the eigen values of A then find eigen values of $(A - \lambda I)^2$.

- (a) $(\lambda_1 - \lambda), \dots, (\lambda_n - \lambda)$
- (b) $\lambda_1, \dots, \lambda_n$
- (c) $\lambda_1^2, \dots, \lambda_n^2$
- (d) $(\lambda_1 - \lambda)^2, \dots, (\lambda_n - \lambda)^2$

Q-1 If λ_1, λ_2 and λ_3 are the eigen values of

$$A = \begin{bmatrix} -2 & -9 & 5 \\ -5 & -10 & 7 \\ -9 & -21 & 14 \end{bmatrix} \text{ then}$$

$\lambda_1 + \lambda_2 + \lambda_3$ is

(a) -16

(b) 2

(c) -6

(d) -14

Q-1 $A = \begin{bmatrix} 1 & 0 \\ 2 & 4 \end{bmatrix}$

eigen values of $4A^{-1} + 3A + 2I$ are

(a) 6, 15

(b) 9, 12

(c) 9, 15

(d) 7, 15

Q-1 $A(3 \times 3)$ real matrix has one eigen value i
then it is other two eigen values can be

(a) $0, 1$

(b) $-1, i$

(c) $2i, -2i$

(d) $0, -i$

Q-1 $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & -2 & 6 \\ 0 & 0 & -3 \end{bmatrix}$

and

(a) $15, -15, 16$

(b) $15, -15, 17$

(c) $15, -15, 18$

(d) $15, -15, -53$

Eigen values of

$$3A^3 + 5A^2 + 6A + I$$



(10)