Q.No./Options	Question
1	Let $T : \mathbb{R}^n \to \mathbb{R}^n$ be a linear transformation and $A, B \in M_n(\mathbb{R})$ be matrix representations of T with respect to ordered bases $\mathcal{B}_1$ and $\mathcal{B}_2$ respectively. If B is an upper-triangular matrix with diagonal entries as $1, 2, \ldots, n$. Then
A	A is invertible.
B	B is diagonalizable but A need not be diagonalizable.
C	A and B have the same eigenvalues and eigenvectors.
D	A is diagonalizable.

Q.No./Options	Question
1	Let $A = \begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}$. Then
☐ A	none of the given statements is true.
☐ B	A is similar to A^k, for all $k \in \mathbb{N}$.
☐ C	A is not diagonalizable.
☐ D	the minimal polynomial of A is $(x-1)$.
Submit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.

.Options	Question
	Let $A \neq I_n \in M_n(\mathbb{C})$ be such that $A^2 = A$. Which of t statement(s) is(are) true.
	1 is the only eigenvalue of A.
	$Trace(A) = Rank(A)$
	$Rank(A) + Rank(I_n - A) = n$
	$(I_n - A)^2 = I_n - A$
nit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.

Q.No.	Options	Question
1		Let $A \in M_{4\times 3}(\mathbb{R})$ and $N(A) = \{0\}$. Then for any matrix $B \in M_{3\times m}(\mathbb{R})$, $m \geq 1$,
	A	none of the given statements is true.
	B	$N(AB) = N(B)$.
	C	$\text{nullity}(B) < \text{nullity}(AB)$.
	D	$C(AB) = C(B)$.
	Submit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.

./Options	Question
	Let $A, B \in M_n(\mathbb{C})$ be non-zero matrices such that $A^2 = A$, $B^2 =$ Then
	$I_n + B$ is invertible.
	both A and B are diagonalizable.
	AB is diagonalizable.
	A is diagonalizable but B is not.

Choose your option and submit to move to next question.
Once moved not possible to come back.
If you wish to skip the question, click on submit do not choose any option.

Q.No./Options	Question
1	Let $\mathbb{C}$ be a vector space over the field $\mathbb{R}$ and $0 \neq z = a + ib \in \mathbb{C}$. Define $T_z : \mathbb{C} \to \mathbb{C}$ such that $T_z(w) = zw$. Then
A	T_z is diagonalizable if z is real.
B	T_z is linear.
C	T_z has no eigenvalue if $b \neq 0$.
D	T_z is always diagonalizable.
Submit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.

Q.No./Options	Question
1	Let $$A = \begin{bmatrix} 4 & 5+2i & -7 \\ 5-2i & 5 & 6i \\ -7 & -6i & 3 \end{bmatrix}$$ Then which of the following statement(s) is(are) correct.
A	A is skew-Hermitian and iA is Hermitian.
B	A is Hermitian and iA is skew-Hermitian.
C	All eigenvalues of iA are real.
D	All eigenvalues of A are real.
Submit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.

Q.No./Options	Question
	Let $A = \begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}$. Then
A	A is not diagonalizable.
B	the minimal polynomial of A is $(x-1)$.
C	A is similar to A^k, for all $k \in \mathbb{N}$.
D	none of the given statements is true.
Submit	Choose your option and submit to move to next question. Once moved not possible to come back. If you wish to skip the question, click on submit do not choose any option.