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State	Finished
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Time taken	49 mins 39 secs
Grade	**9.00** out of 20.00 (**45**%)

Question **1**

Correct

Mark 1.00 out of 1.00

Select the correct phrase in place of [1] so that the statement is true.

$\mathbb{R}^2$ is [1] of $\mathbb{R}^3$

- not a subspace
- a subspace
- a subset of ordered triples
- a subset of ordered pairs

The correct answer is: not a subspace

Question **2**

Incorrect

Mark 0.00 out of 2.00

Select True or False:

True	False	
◉	○	System given below is consistent 2x -3y -z = 3 ; x + 2y - z = 4 ; 5x - 4y -3z = - 2

System given below is consistent
2x -3y -z = 3 ; x + 2y - z = 4 ; 5x - 4y -3z = - 2: False

Question **3**

Not answered

Marked out of 2.00

Let A be an $m \times n$ matrix. The rank of A is the order of a [ ] sub-matrix with [ ] sub-determinant. Thus, rank of A is [ ] as largest sub-matrix can be of order [ ]

The correct answer is:
Let A be an $m \times n$ matrix. The rank of A is the order of a [largest] sub-matrix with [non-zero] sub-determinant. Thus, rank of A is [less or equal to minimum of m and n] as largest sub-matrix can be of order [m by m if m is minimum of m and n]

Question **4**

Incorrect

Mark 0.00 out of 1.00

If $|A| \neq 0$ then a system $AX = B$ is consistent and has trivial solution

inconsistent and has no solution

consistent and has unique solution

The correct answer is:
If $|A| \neq 0$ then a system $AX = B$ is [consistent and has unique solution]

Question **5**

Correct

Mark 1.00 out of 1.00

If a matrix A is non-singular, then there exists a nonzero matrix B such that AB is the zero matrix.

Select one:

- True
- False

The correct answer is 'False'.

Question **6**

Correct

Mark 3.00 out of 3.00

Solve the following system and choose the correct answer.

$$7x_1 - 2x_2 + 5x_3 + x_4 = 0$$
$$10 + x_1 - x_2 + x_3 = 10$$
$$x_2 + x_4 = 2x_3$$
$$x_1 + x_4 = -x_3$$
$$4x_4 - x_2 + 2x_1 = 0$$

- system has infinitely many solutions.
- system is inconsistent.
- system has only the zero solution.
- system has finitely many non zero solutions.

The correct answer is: system has only the zero solution.

Question **7**

Partially correct

Mark 1.00 out of 2.00

Fill in the blanks

The set of vectors $\{(1, 2, 3, 4), (4, 3, 2, 1), (2, 1, 3, 4)\}$ is linearly

independent

in the vector space

V

Question **8**

Incorrect

Mark 0.00 out of 1.00

Determine whether the following statement is True or False.

Set of vectors $\{(0, 1), (1, 1), (0, 0)\}$ forms a basis of $\mathbb{R}^2$.

- False
- True

The correct answer is: False

Question **9**

Not answered

Marked out of 2.00

What is the dimension of vector space of 4×4 real matrices with sum of entries of each row is zero and sum of entries of each column is zero?

Answer:

The correct answer is: 9

Question **10**

Correct

Mark 1.00 out of 1.00

Enter the correct numerical value

Let $A = \begin{pmatrix} 1 & 1 & -1 \\ 2 & -3 & 4 \\ 3 & -2 & 3 \end{pmatrix}$. Then rank of A^t is...

Answer: 2

The correct answer is: 2

Question **11**

Incorrect

Mark 0.00 out of 2.00

Solve the following system and choose the correct answer.

$3x_1+x_2=-x_3$
$x_1+x_2=-x_3$
$-\frac{3}{4}x_1-\frac{1}{4}x_2-\frac{1}{4}x_3=0$
$12x_1+12x_2+12x_3=0$

- system has infinitely many solutions
- system has no solutions
- system has unique solution
- system has only zero solution

The correct answer is: system has infinitely many solutions

Question **12**

Correct

Mark 2.00 out of 2.00

Consider the following statements and select the correct option.

1. Any two row equivalent matrices have the same rank.
2. Any two row equivalent matrices have the same determinant.
3. There exist an $n \times n$ matrix with rank(A)< n, but determinant is not zero.
4. Let A be an orthogonal matrix that means $AA^t = I$. Then det(A)=±1.

- Only 1 and 4 are correct
- All are correct
- Only 3 and 4 are correct
- Only 2 and 3 are correct

The correct answer is: Only 1 and 4 are correct