

## MID-APRIL TEST 2025-26 MATHEMATICS

Class: XII	Time: 1hr
Date: 16.04.25	Max Marks: 25
Admission no:	Roll no:

**General Instructions:** 

Question 1 to 5 carries ONE mark each. Questions 6 to 8 carries TWO marks each. Questions 09 to 11 carries THREE marks each. Question 12 carry 5 mark.

$\begin{bmatrix} 5 & 3 & -1 \\ 7 & 7 & 2 \end{bmatrix} = 0$	Then the value of y is			
1. $\prod_{x \to 3} -7 + \frac{x}{2} = 0,$	Then the value of x is			
a) 3	b)5	c) 7	d) 9	
[0 2b	-2]		- / -	
2. Matrix $A = \begin{bmatrix} 3 & 1 \end{bmatrix}$	3 is given to be sy	ymmetric. Find the value	es of a &b.	
l3a 3	-1]			
a) $a = -2/3, b = 3/2$	2 b) $a=3/2$ , $b=-3/2$	c) $a=2/3$ , $b=-2/3$	d) None of these	
3. If A is a square matrix such that $A^2 = A$ , then $(I-A)^3 + A$ is equal to				
a) l	b) $0$	c) I-A	d) I+A	
4. The value of $\begin{vmatrix} cos15^{\circ} & sin15^{\circ} \\ cosned & sin15^{\circ} \end{vmatrix}$ is				
$ Sin/5\rangle$	$\frac{cos}{5^{\circ}}$	c) -1	d) None of these	
5. If the points $(2, -3)$ , $(y, -1)$ and $(0, 4)$ are collinear, then the value of y is				
a) $10/7$	b) 7/3	c) $\frac{13}{7}$ d) 1	б	
6 For a $2x^2$ matrix $\Lambda =$	[a.] whose elements	$\frac{(i+2j)^2}{(i+2j)^2}$	Write the value of a.e.	
0. For a 2x3 matrix, A= $[a_{ij}]$ , whose elements are given by $a_{ij} = \frac{1}{4}$ , while the value of $a_{13}$				
X a23.				
7. If $\begin{bmatrix} x - y & 2y \\ 2y + z & x + y \end{bmatrix} = \begin{bmatrix} 1 & 4 \\ 9 & 5 \end{bmatrix}$ , then write the value of x+y+z.				
8. Find k, if the points (3,-2), (k, 2), (8, 8) are collinear.				
9. If $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$ , find x and y such that $A^2 + xI = yA$ .				
[1 2 3]				
10. Find the inverse of the matrix $A = \begin{bmatrix} 2 & 3 & 1 \\ 3 & 1 & 2 \end{bmatrix}$ and verify that $A^{-1}A = I$ .				
11. If $A = \begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$ and I is the identity matrix of order 2, then show that $A^2 = 4A-3I$ .				
Hence find the A <sup>-1</sup> .				
12. Using the matrix method, solve the following system of equations: $x+2y+z=7$ , $x+3z=11$ ,				
2x-3y=1.				
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