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| **CLASS 12** | **APPLIED MATHEMATICS 241** |  |
| **QUESTION BANK** | **CHAPTER::MATRICES AND DETERMINANTS** |  |

1 MARK QUESTIONS

1. If A=[32x+3x−1x+2] is a symmetric matrix, then x =………

2. If A =  and A2 – KA – 5I = 0, then K =……….

3. The matrix is a

(a) identity matrix

(b) symmetric matrix

(c) skew symmetric matrix

(d) none of these

4.  For any two matrices A and B, we have

(a) AB = BA

(b) AB ≠ BA

(c) AB = O

(d) None of the above

5. If A is a skew-symmetric matrix, then A2 is a

(a) Skew symmetric matrix

(b) Symmetric matrix

(c) Null matrix

(d) Cannot be determined

6. If a matrix has 6 elements, then number of possible orders of the matrix can be  
(a) 2  
(b) 4  
(c) 3  
(d) 6

7. The diagonal elements of a skew symmetric matrix are  
(a) all zeroes  
(b) are all equal to some scalar k(≠ 0)  
(c) can be any number  
(d) none of these

8.  If A =  and A = A’ then  
(a) x = 0, y = 5  
(b) x = y  
(c) x + y = 5  
(d) x – y = 5

9. If a matrix A is both symmetric and skew symmetric then matrix A is  
(a) a scalar matrix  
(b) a diagonal matrix  
(c) a zero matrix of order n × n  
(d) a rectangular matrix.

10. Find the values of x, y, and z if =

2 MARKS QUESTIONS

11. **If  Prove that A – At is a skew – symmetric matrix.**

**12. Solve for x given that https://cdn1.coolgyan.org/statics/12/maths/impq/3_1/image036.png**

**13. Find the value of x if**

**14.** Find the co-factor of the element a23 of the determinant:

15. If A and B are invertible matrices of order 3, |A| = 2 and |(AB)-1| = −16 Find |B|.  
16. Find the adjoint of the matrix A =

17. For what value of ‘x’, the matrix  is singular?

3 MARKS QUESTIONS

18. Find the minors and co-factors of all elements of the determinant

19. Solve the system of linear equations using Cramer’s rule ::

20. If A = , find A-1 .

21. ST

22. Find the area of the triangle whose vertices are (3, 8) (-4, 2) and (5, 1).

23. **Verify that det A = det**

4 MARKS QUESTIONS

24. **If**  
 **then verify that (AB)-1 = B-1 A-1**

25. **If**  
**find A-1, using A-1 solve the system of equations**  
**2x – 3y + 5z = 11**  
**3x + 2y – 4z = -5**  
**x + y -2z = -3**

**26. Verify that**  
**https://cdn1.coolgyan.org/statics/12/maths/impq/4_4/image067.png**

**27. If , find matrix B such that AB = I.**