DETERMINANTS

APPLICATION OF DETERMINANTS AND MATRICES

EXERCISE

Q.1 The system of equations $x + 2y + 3z = 1$, $2x + y + 3z = 2$ and $5x + 5y + 9z = 4$ has.

(A) unique solution (B) many solutions

(C) inconsistent (D) None of these

Q.2 The presence of unique solution in the system $x + y + z = b$, $2x + 3y - z = 6$, $5x - y + az = 10$ relies on.

(A) b only (B) a only (C) a and b (D) neither a nor b

Q.3 for what value of p does this system have no solution $px + y + z = 1$, $x + py + z = p$, $x + y + pz = p^2$, have no solution.

(A) –2 (B) –1 (C) 1 (D) 0

Q.4 The value of k for which the system of equations $3x + ky - 2z = 0$, $x + ky + 3z = 0$ and $2x + 3y - 4z = 0$ has a non – trivial solution is-

(A) 15 (B) 16 (C) $\frac{31}{2}$ (D) $\frac{33}{2}$

Q.5 The determinant $\begin{vmatrix} \cos(\theta+\phi) & -\sin(\theta+\phi) & \cos 2\phi \\ \sin\theta & \cos\theta & \sin\phi \\ -\cos\theta & \sin\theta & \cos\phi \end{vmatrix}$ is-

(A) 0 (B) independent of θ

(C) independent of ϕ (D) independent of both θ and ϕ

Q.6 The system of linear equations $x + y + z = 2$, $2x + y - z = 3$, $3x + 2y + kz = 4$ has a unique solution if-

(A) $k \neq 0$ (B) $-1 < k > 1$ (C) $-2 < k < 2$ (D) $k = 0$

Q.7 If the system of equations, $x + 2y - 3z = 1$, $(k + 3)z = 3$, $(2k + 1)x + z = 0$ is inconsistent, then what is the value of k.

(A) -3 (B) $\frac{1}{2}$ (C) 0 (D) 2

Q.8 The system of equation $x + 2y + 3z = 1$, $2x + y + 3z = 2$, $5x + 5y + 9z = 4$ possesses.

(A) unique solution (B) infinitely many solutions

(C) inconsistent (D) None of these

ANSWER KEY

1. A

2. B

3. A

4. D

5. B

6. A

7. A

8. A