**Q.No.1 Encircle the correct option. Cutting, over writing and use of lead pencil is not allowed. (10)**

**i.** In − = , then value of z is:

**(a)** 10 **(b)** **5** **(c)** 15 **(d)** 25

**ii.** If A = −−− , then A32 and M32 are:

**(a)** 2 and − 2 **(b)** 3 and − 4 **(c)** **− 7 and 7** **(d)** 7 and − 7

**iii.** −− X = , then X = ?

**(a)** −− **(b)** − **(c)** **(d)** −

**iv.** Number of distinct elements in both diagonals of matrix [b*i*j]3×3:

**(a)** 9 **(b)** 6 **(c)** **5** **(d)** 3

**v.** If det Am = 1, for any positive integer m, then det A cannot be:

**(a)** **0** **(b)** 1 **(c)** −1 **(d)** None of these

**vi.** If A and B are matrices of order 6 then det (2A + 2B) = ?

**(a)** 2 det (A + B) **(b)** **26 det (A + B)** **(c)** 212 det (A + B) **(d)** None of these

**vii.** If A is a square matrix of order 4 × 4 and | A | = 3 then |3A| = ?

**(a)** 9 **(b)** 27 **(c)** 81 **(d)** **243**

**viii.** For A = − , then A4 = ?

**(a)** O2 **(b)** **I2** **(c)** A2 **(d)** A

**ix.** If a square matrix has 9 elements in its both diagonals, then its order may be:

**(a)** **5 × 5** **(b)** 4 × 6 **(c)** 6 × 6 **(d)** 3 × 8

**x.** A square matrix ′′A′′ in which aij = 0 ∀ i = j and aij =  ∀ i ≠ j is a/an:

**(a)** **Scalar matrix** **(b)** Diagonal matrix **(c)** Null Matrix **(d)** Identity Matrix

**Q. No. 02 Answer the short questions 2 × 10 = 20**

1. Show that: = r
2. Evaluate:
3. Show that = *l* 2(3a + *l*)
4. Show that = (a + b + c)(a – b)(b – c)(c – a).
5. If B = , Find B21, B22, B23 and | B |
6. Without expansion verify that : = 0
7. Show that: = (x + 3)(x – 1)3
8. If A and B are non-singular matrices, then show that (AB) – 1 = B – 1 A – 1 .
9. If A is square matrix of order 3, then show that | kA | = k3 | A |.
10. Write any 6 Properties of determinants.
11. If A and B are square matrices of same order, then explain why in general (A – B)2 ≠ A2 – 2AB + B2
12. Find the matrix A if, A =
13. Find x and y if + 2 = .

**Q. No. 03** **(a)** Show that = rI3 05

**(b)** Find the inverse of A = and show that A– 1A = I3. 05