

KATHMANDU UNIVERSITY
End Semester Examination
March 2025

Marks Scored:

Level : BSc

Year : I

Course : DSMA 114

Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date :

17 MAR 2025

SECTION "A"

[10 Q. × 1 = 10 marks]

Fill in the blank space(s) by writing the most appropriate word(s) or symbol(s).

1. The _____ entries of a skew-symmetric matrix are zero.
2. A set of vectors in the vector space containing the zero vector is _____.
3. Any non-zero vector \mathbf{u} can be expressed as _____ of a vector parallel to the given non-zero vector \mathbf{v} and a vector orthogonal to \mathbf{v} .
4. The square of length of vector $\mathbf{u} = (1, -2, -3, 4)$ is _____ unit.
5. A finite dimensional _____ inner product space is unitary space.
6. The determinant of $(A - \lambda I)$, in the characteristic equation of the matrix A , I being an identity matrix, is _____ in λ .
7. A matrix is real if the matrix is equal to its _____ matrix.
8. A partitioned matrix with the zero blocks off the main diagonal (of blocks) is a _____ diagonal matrix.
9. The solution of a linear system $\mathbf{AX} = \mathbf{B}$ is unique if the matrix A is square & _____.
10. The n -vector with only one component is _____.

