VPM's B.N. Bandodkar College of Science Thane (Autonomous)

S.Y.BSc Computer Science

Linear Algebra using Python Subject code: BNBUSCS4T5

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Sr.No.	Practical Aim	Date	Signature
1.	Write a program which demonstrates the following: a. Addition of two complex numbers. b. Displaying the conjugate of a complex number. c. Plotting a set of complex numbers. d. Creating a new plot by rotating the given number by 90 degrees.		
2.	Write a program to do the following: a. Enter a vector u as a n-list Enter another vector v as a n-list. b. Find the vector au+bv for different values of a and b. c. Find the dot product of u and v.		
3.	Write a program to do the following: a. Enter an r by c matrix M. b. Display M in matrix format. c. Find the scalar multiplication of M for a given scalar. d. Find the transpose of the matrix M.		
4.	Write a program to do the following: a. Find the vector – matrix multiplication of a r by c matrix M with a c-vectors u. b. Find the matrix-matrix product of M with a c by p matrix N.		
5.	Write a program to enter a matrix and check if it is invertible. If the inverse exists, find the inverse.		
6.	Write a program to convert a matrix into its row echelon form.		
7.	Write a program to do the following: a. Enter a positive number N and find numbers a and b such that $A^2 – B^2 = N$. b. Find the gcd of two numbers using Euclid's algorithm.		
8.	Write a program to do the following: Enter a vector b and find the projection of b orthogonal to a given vector u. Find the projection of b orthogonal to a set of given vectors.		
9.	Write a program to enter a given matrix and an eigenvalue of the same. Find its eigenvector.		