



भारतीय सूचना प्रौद्योगिकी संस्थान भागलपुर
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY BHAGALPUR
(An Institute of National Importance under Act of Parliament)

Department of Computer Science and Engineering

Branch: B. Tech (CSE/ECE/MAE/MNC)

Course Name: Data Structure

Maximum Time: 2 hours

Semester: 2nd

Course Code: CS116

Date: 10/01/2025

1. Write a program to initialize and declare the array, which contains the record marks of 10 students. Further perform the various operation such as:
 - a. Display the maximum and minimum marks
 - b. Display marks in sorted order
 - c. Identify the 2nd maximum and minimum marks
2. WAP to perform the various operation using 2D Array such as addition, subtraction, and multiplication of two matrices of the same size.
3. Perform the various operation on given matrix using array such as:
 - a) Compute the transpose of the given matrix
 - b) Identify whether a given matrix is an identity matrix or not.
 - c) Identify the given matrix is upper triangular matrix or not.
 - d) Find the sum of the left and right diagonals elements of the given matrix.

$$\begin{pmatrix} 28 & 28 & 28 \\ 33 & 31 & 33 \\ 29 & 31 & 29 \end{pmatrix}$$

4. WAP to implement the linear search and Binary Search using array, and identify the key element that is present or not inside array.