

Programming & Data Structure Laboratory (CS112)

Lab Exercise 07

Indian Institute of Technology, Patna

June 02, 2022

Submission Deadline: **5:00 pm 02/06/2022**

Instructions:

- Proper indentation is mandatory.
- You should comment the statements whenever necessary, to make the code understandable.
- Answers files: **7_1.c, 7_2.c, 7_3.c, 7_4.c, 7_5.c, 7_6.c**

Total Marks: 50

EXERCISE 1: Write a C program to find sum of two matrix of order 2*2 using multidimensional arrays where, elements of matrix are entered by user. [5]

EXERCISE 2: Write a C program to merge two sorted (in non-decreasing order) arrays of integers into one sorted array (in non-decreasing order). Take the sizes (may be different) of those two arrays and their contents from the user. [5]

EXERCISE 3: Write a C program to check whether a square matrix of integers is a magic square or not. If you do not know what is a square matrix, please Google it. Take the input (dimension and elements) from the user. [10]

EXERCISE 4: Write a C program to delete all the duplicates from an array of numbers. After deleting a duplicate all the numbers on the right should be shifted one position to the left. Take the input from the user. [5]

EXERCISE 5: Write a C program to calculate matrix multiplication. Take the dimensions of the two matrices from the user. Check whether they are compatible for matrix multiplication or not. If they are not compatible then print an appropriate error message. Take the values in the matrix using random numbers (use *rand()* function. If you gave not used it then Google it how to use *rand()* function). Print the resulting matrix. [10]

EXERCISE 6: Write a C program to find the inverse of a square matrix. Take the input from the user. [15]