

## **Data Structures Theory Assignment 1**

*Assignment must be handwritten.*

*Submission deadline: 16<sup>th</sup> October 2023*

1. Define the following:
  - a) Data type
  - b) Variable
  - c) Keywords in C
  - d) Preprocessor directive
  - e) Header file
2. Explain the terms: pseudocode, algorithm and flowchart. What are the various symbols used in a flowchart. Write an algorithm and draw the flow chart for checking whether an year entered by the user is leap year or not.
3. Define Data Structures and explain its significance. Also, explain its various types.
4. Differentiate between:
  - a) Linear and non-linear data structures
  - b) Static and dynamic data structures. Also explain various dynamic memory allocation functions.
5. Differentiate between:
  - a) Array and structure
  - b) Array and linked list