Chandigarh College of Engineering and Technology, (Degree Wing) Chandigarh
Department of Computer Science and Engineering
CS-301: Data Structures Assignment: 03 Date: 30.07.2024

| S. No. | **Note:** Start answer of a fresh question from fresh page only. Direct answer to a question will not be entertained. | Marks | course outcome (CO) |
|---|---|---|---|
| 1. | Write a program that works like a binary calculator for the flowing operations. You are required to test the code using **CALL by VALUE** and **CALL by REFERENCE** methodology/techniques.<br>(a) Addition<br>(b) Subtraction<br>(c) Multiplication<br>(d) Division<br>(e) Modulo operation<br>(f) Remainder | | CO4 |
| 2. | Design an algorithm that reads in **n** single digits and converts them into a single integer. For example, the algorithm should convert the set of 5 digits {2, 7, 4, 9 and 3} to the integer 27493. Finally implement the designed algorithm. | | |
| 3. | Prove that: $2n + 1 \leq 2^n$ for all $n \geq 3$. | | |
| 4. | What are two problems with arrays? Discuss with the help of suitable example. | | |
| 5. | What are two criteria usually used to measure algorithm's efficiency? Discuss. Give suitable example in support of your answer. | | |