

M.C.A. Sem (I) Mid Term Examination 2025-26
CS108: Data Structures and Algorithms

Time Allowed: 1 hrs.

Max. Marks: 20

1. What do you mean by the space complexity and time complexity of an algorithm?	(5)
2. Write algorithm/pseudo code to sort elements which are coming in online manner.	(5)
3. You are given an unsorted array of n integers. You need to search for k different target values in this array. You can choose between two approaches: (A) For each target, scan the entire array sequentially and (B) First, sort the array once, then use binary search for each target. Derive a condition (in terms of k and n) for which Approach B becomes more efficient than Approach A.	(5)
4. Explain stack and its operations. Also, justify whether the stack is a right data structure to implement recursion.	(5)