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| **Mid-Term Examinations – August 2021** | | | | | | | | | | |
| Programme | | | : | **B.Tech CSE** | | Semester | | : | **Interim 2021-22** | |
| Course | | | : | **Data Structure & Algorithm** | | Code | | : | **CSE2002** | |
| Faculty | | | : | **Mr. Prateek Singhal** | | Slot/ Class No. | | : | **C11+DC1/0061** | |
| Time | | | : | **1 ½ hours** | | Max. Marks | | : | **50** | |
| **Answer all the Questions** | | | | | | | | | | |
| **Q.No.** |  | **Question Description** | | | | | | | | **Marks** |
| 1 | a) | Explain Selection sort in detail with example and algorithm. Selection sort:  77, 34, 22, 73, 1, 4, 98. | | | | | | | | **5** |
|  | b) | Write an algorithm for insertion sort with example, Insertion sort:  77, 34, 22, 73, 1, 4, 98. | | | | | | | | **5** |
| 2 | (a) | Write an algorithm for Merge Sort with an given example Merge sort:  77, 34, 22, 73, 1, 4, 98. | | | | | | | | **5** |
|  | (b) | Define Data Structure and explain its types with a state difference between linear and non-linear data structure with examples. | | | | | | | | **5** |
| 3 |  | Differentiate linear search and binary search methods with suitable examples and compare them in terms of Time complexity | | | | | | | | **10** |
| 4 |  | Write an algorithm to find the key 84 in the given sequence using binary search and binary sort:  81, 82, 56, 57, 30, 19, 84, 47, 42, 25 | | | | | | | | **10** |
| 5 |  | Define ADT. Write the ADT for stack and singly linked list | | | | | | | | **10** |
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