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| animatedLOGO | **Assignment No. 02 Spring 2021 CS502- Design and Analysis of Algorithms** | | **Total Marks: 20**  **Due Date: 02-06-2021** |
| **Instructions**  **Please read the following instructions carefully before solving & submitting assignment:**  **It should be clear that your assignment will not get any credit (zero marks) if:**   * The assignment is submitted after due date. * The submitted assignment is other than MS Word file. * The submitted assignment does NOT open or file is corrupted. * The assignment is copied (from other student or ditto copy from handouts or internet).   **Uploading instructions**  For clarity and simplicity, you are required to upload/submit only one **.doc/docx** file.  **Objectives**  The objectives of this assignment are;   * To make you familiar with Merge Sort. * To make you familiar with Heap Sort.   **For any query about the assignment, contact at** [**CS502@vu.edu.pk**](mailto:CS502@vu.edu.pk)  **Good Luck!** | | | |
|  | | **Total Marks: 20** | |
| **Question 1 (5+5 marks)**  Sort the following list using Merge Sort in ***ascending order***.  "K, N, L, D, S, D, Q, R"  It is required to draw tree structure of the merge sort procedure for both divide and combine phase separately.  Note: Finally, you will have two tree structure one for divide phase and other is for combine phase and it is also required to performed all the steps to get full marks.  **Question 2 (10 marks)**  For the given array, draw the final Max-Heap structure. Show a final ***single tree*** only. Steps are not required.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 43 | 12 | 23 | 2 | 55 | 11 | 7 | 33 | 60 | 32 | | | | |
| **Lectures Covered:** Lecture No. 07 to 16.  **Deadline:** Your assignment must be uploaded / submitted on or before 02-06-2021. | | | |
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