**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
CSL 201: DATA STRUCTURES LAB(R3)**

**INTERNAL LAB EXAM**

Time: 3 hrs Max Mark:100 marks

Accept n numbers from the keyboard and create a singly linked list where each node has maximum of m numbers(m<=n) and (i+1) th node can be created if ith node has m elements. Only the last node will have less than m elements. Sort the m elements in each node and the nodes in the linked list should be arranged based on the least element in each node such that after rearrangement the first elements in all the nodes from first to the last node should be in the sorted order.

|  |  |
| --- | --- |
| 42 | 21 |

Sample input: n=8 and m=3

|  |  |  |
| --- | --- | --- |
| 3 | 8 | 4 |

|  |  |  |
| --- | --- | --- |
| 5 | 13 | 1 |

Output after each phase

|  |  |
| --- | --- |
| 21 | 42 |

|  |  |  |
| --- | --- | --- |
| 3 | 4 | 8 |

|  |  |  |
| --- | --- | --- |
| 1 | 5 | 13 |

|  |  |  |
| --- | --- | --- |
| 1 | 5 | 13 |

|  |  |  |
| --- | --- | --- |
| 3 | 4 | 8 |

|  |  |
| --- | --- |
| 21 | 42 |

You can verify your program using this example. But for evaluation, n>=20 and m>=4. As a special case put m=1.

Mark distribution:

Algorithm- 30 marks

Program- 20 marks

Output - 20 marks

Viva 30 marks

Total 100 marks which will be converted out of 15 while calculating Internal Evaluation marks.