QUESTION NO 3:

Calculate the value of no, for which running time of merge sort is better than insertion sort.

|  |  |  |
| --- | --- | --- |
| **Value of n** | **Insertion sort (seconds)** | **Merge Sort(seconds)** |
| 1000 0.001000 0.001000 | | |
| 5000 0.021000 0.007000 | | |
| 10000 0.083000 0.027000 | | |
| 20000 0.289000 0.084000 | | |
| 30000 0.515000 0.249000 | | |
| 40000 1.150000 0.391000 | | |
| 50000 1.753000 0.535000 | | |
| 60000 2.753000 0.814000 | | |

When n>43

QUESTION NO. 5

|  |  |  |  |
| --- | --- | --- | --- |
| **Value of n** | **Insertion sort (seconds)** | **Merge Sort(seconds)** | **Hybrid Merge Sort (Seconds)** |
| 1000 0.001000 0.001000 0.001000 | | | |
| 5000 0.021000 0.007000 0.005000 | | | |
| 10000 0.083000 0.027000 0.008000 | | | |
| 20000 0.289000 0.084000 0.025000 | | | |
| 30000 0.515000 0.249000 0.050000 | | | |
| 40000 1.150000 0.391000 0.049000 | | | |
| 50000 1.753000 0.535000 0.075000 | | | |
| 60000 2.753000 0.814000 0.113000 | | | |
| 100000 6.391000 | | | |
| 500000 | | | |
| 1000000 | | | |