Q1- Write the steps of the Merge Sort algorithm for this array [16, 21, 11, 8, 12, 22]

Answer:

[16, 21, 11, 8, 12, 22]

[16, 21, 11] [8, 12, 22]

[16] [21, 11] [8] [12, 22]

[16] [21] [11] [8] [12] [22]

[16] [11, 21] [8] [12, 22]

[11, 16, 21] [8, 12, 22]

[8, 11, 12, 16, 21, 22]

Q2- Write the Big-O notation

Answer:

[16, 21, 11, 8, 12, 22] ----> n

[16, 21, 11] [8, 12, 22] ----> n/2

[16] [21, 11] [8] [12, 22] ----> n/2

[16] [21] [11] [8] [12] [22] ----> n/2

[16] [11, 21] [8] [12, 22] ----> n

[11, 16, 21] [8, 12, 22] ----> n

[8, 11, 12, 16, 21, 22]

Big-O notation is O(nlogn)