2(a)

The elements of arr1 are copied up to leng positions of arr3 and the elements of arr2 are copied to the remaining positions of arr3, starting from index leng, while maintaining their original orders. The sorting function is defined to recursively sort the input list para. The function divides the list para into two halves, a and b, using the midpoint (mid). It recursively applies the sorting function to both halves, a and b. The function then merges the sorted halves a and b by comparing the elements from both halves and placing them in the resulting array arr. The time complexity of this is O(n log n), where n is the total number of elements in the merged list. This is because the algorithm recursively divides the input into two halves, performing a merge operation at each level, which takes O(n) time.