Q1.SELECTION SORT
At DS1 :
dget_at_index(j) time : Constant
set_at_index(j,x) time : Θ(k log k)
Due to need of swapping,many repetitions selections sort would be best.

Insertion sort will having Θ(k**2 log k) time,each swap consuming Θ(k log k) time thus rejected

Merge sort will take too much space with space complexity O(n) thus rejected.

Q2.MERGE SORT
At Array A:
No. of comparisons at mergesort is direct proportional to n log n and it maintains the relative order of elements.

Insertion and selection sort ,both having more time complexities than merge sort ,so will be rejected

Q3.INSERTION SORT
At Array A:
Insertion sort works with even array with little partially sorted.and its time complexity i.e. Θ(n),its fine with limited swap senariocs