Q.1

1. $T(n)=O(n^2)$ since $T(n)=O(n)$ for the while loop
and $T(n)=O(n)$ for insert operation
Thus, the total worst case running time $T(n)=O(n\times n)=O(n^2)$

2. $T(n)=O(n)$ since $T(n)=O(n)$ for the while loop
and $T(n)=O(1)$ for append operation
Thus, the total worst case running time $T(n)=O(n\times 1)=O(n)$

Q.3

b) For my implementation, the worst-ase running time is $O(n)$.
since my implementation consists of three "for" loop parallel and for the operation inside each loop $T(n)=O(1)$
Thus, for each for loop $T(n)=O(n\times 1)=O(n)$
and the total worst-case running time is $O(n+n+n)=O(3n)=O(n)$

Q.4

a) In the worst case, all values in list should be removed, under such circumstance The entire list has to be iterated to ~~reach the end of the~~ make the remove(value) function returns ValueError and end the loop. In that case, $T(n)=O(n)$ for the outer while loop, and $T(n)=O(n)$ for the inner remove function. Thus, the total worst-case running time is $O(n\times n)=O(n^2)$

c) My implementation consists of 2 parallel "for" loop. and for the operation inside each loop, $T(n)=O(1)$
Thus, for each loop $T(n)=O(n\times 1)=O(n)$,
and the total worst-case running time is $O(n+n)=O(2n)=O(n)$