Sort the following elements using merge sort divide and conquer Stage by {38, 27, 43, 3, 9, 82, 10, 15, 86, 52, 60, 5] using and analyze time complexity.

Given array Merge sort

| 38 | 27 | 43 | 3 | 9 | 8 2 | 10 | 15 | 88 | 52 | 60 | 5 |

| 38 | 27 | 43 | 3 | 9 | 82 | | 10 | 15 | 88 | 52 | 60 | 5 |

| 38 | 27 | 43 | | 3 | 9 | 52 | | 10 | 15 | 88 | | 52 | 60 | 5 |

| 27 | 38 | | 3 | 43 | | 9 | 82 | | 10 | 15 | | 88 | | 52 | 60 | 5 |

| 3 | 27 | 38 | 43 | | 9 | 10 | 15 | 82 | | 10 | 15 | | 52 | 86 | | 5 | 60 |

| 5 | 52 | 60 | 88 |

| 3 | 5 | 9 | 10 | 15 | 27 | 38 | 43 | 52 | 60 | 82 | 88 |

∴ sorted sort (3, 5, 9, 10, 15, 27, 38, 43, 52, 60, 82, 88

Time complexity = O(n)

) Sort the array by 64 34 25 12 22 11 90 using bubblesort what is the time complexity of selection sort in the best & average case.

Given arras = 64 34 25 12 22 11 90

in bubblesort we bring from smallest element in there correct position continue this until each element reach there.

64	34	25	12	11	22	90
64	34	25	11	12	22	90
64	34	11	25	12	22	90
64	11	34	25	12	22	90
11	64	34	25	12	22	90
11	64	34	12	25	22	90
11	12	64	34	22	25	90
11	12	64	22	34	25	90
11	12	22	64	34	25	90