" | Soul the Following elements using marge sort divide and conaviod (38127,143,3,9,187,10,15,88,152 Gols Justing and analysize time complexito the algorithm. Ed given avay 38 43 88 52 60 88 10 38 27 43 3 82 88 10 15 52 60 38 27 43 9.82 3 10 15 88 52 60 38 <u>F</u> 3 TÓ 15 88 53 38 27 3 43 9 82 10/15 88 43 5 52 60 88 9 10 85 38. 27 15 15. 27 38 43 82 10 38 43 52 60.82 88 15 10 27 "Sovted 13ct = (215/9/10/15/27/38/43/25/60/82/88 Time complexity: Time complexity of manye sout is o(n109n) is the run of elements in the list o(nlon) increase by the input into haires 109n times and n element of each time takes o(n) times

sort the array 64,134,25,121,11,90 using bubble sort what is the time complexity of solution sort in that best poorst laverage cases. Sol vivan array = . 64 34 95 12 22 11 90 In bubble sout we bring the smalkest element in the correct position continue this each element reach the corrent position. 22 40 . The sorted aways 40/15 15. 22 40] (11/12/155/52/34/40/64) 1.1 20 selection Fort Courtery 1:1-40 Selection Sout is an another single (onfocion Sorted algorithm best case : och2) 1,40 Average : O(n2) ,64 coust rase : o(n2) The selection sort has 11. 40] a time complexity O(n2) it always 995 through the same of & Conparisions 

34 Zent 1/2. Challet CH 125/15/15/11 ozind zerection 2014 countries the time complexion of selection sort in the bestroust on moving ases 34) UMELL WALLED ! GET 1 72 115 10,5 111 In the selection we will the room the brood element on those convert position best so. 11 02 1.5 ". The sorted 1/2+ 15 11112 122125164 Time Complexity selection, sort best case: 0(n2) Averge race ! O(n?) Coorst (are 10(n2) The s'elecion sout has a time complexify it alwards thrown some of nod comparistan

(3) Soul the Following elements using insertion soul using Brute Fouce Appoint strategy (28 127 143 12A 18216. 175188 15216015) and analyze complexity of the algorithm.

Sol) hiven array

[38,127,143,1312,161,28,122,16012]

solve:

38	2'7	1 015	15	9 5					1		
3		43	13	7 / 8	32	10	15	88	52	60	2
27	38	43	3	91	82	101	16	1 00	1		<del>  </del>
1			<del> </del> ,		02	10	15	88	25	8	5
2.7	.38	43	3	01	82	10	15	88.	52	8	5
13	27	78	<u> </u>	9	82	0	Is	88	(2)	60	
3	9	27	স্থ্ৰম্	SIP.	82	10	15	88	22	60	5
3	9	27	38	43	82	10	12	88	52	60	5
3	9	10	27	38	3 43	3 82	2 15	88	52	160	
3	9	10	15	2	38	4	3 82	88	SZ	60	
3	9	10	151	27	. 38	र्ष पर	\$ 82	100			
		<del></del>				9 1-	3 02	88	52	60	5
3	9	10	12	27	38	43	52	88	- 88	60	2
3	9	10	15	57	38	143	52	. 60	182	1 88	
3	2	9	10	-2-7	38	43	25	60	<del>-</del>		2
3	5	9	10	15	2	.38	_	-			1
Lime combiexity; cooret core; o (25)											
(2000 + ONS)											
Average case: 0 (n2) Best case: 0 (n)											
	1 18 5		1	7 1.0	3024		200	e !		(n)	٠

```
Some away of [71-51212110.1-215181-3181] -41119
    -1 101-618/11,-9) integers sort the Following eleme
   nts using insertion sort using Bruke Force Approach
   Thateax analysise comblexity or alborithm
Sa) Insert: -4 =
    [4]
   Insert: -2 = [-2/4]
   Insert: 5 = [-21415]
   Insert: 3 = (-2/3/4/5)
   In evsert: 10= (-2131415/10)
   Insert: -5 = [-5121415110]
   msert: 2 = (=51-212121415/10)
   In sert: 8= [5(-2,1213141518110]
   Insert: -3= [-51-31-213141518110]
   INSENT: 6= C-51-31-21219151618110
   INCON+: 7= (-21-71-51513-1412161) 18/10]
   Insert: -4 = (-51-41-31-2121314151617,8110)
   INSELT: 1= [5/41-3/5/1/5/3/4/2/6/1/8/10]
   Insert: 9= [51-41-31-21/12/314/216/13/9/10]
   insert:-1=[-51-41-21-21-111213141516171819110]
   Insert: 0= (=5 LA 1-3 L5 1-110115131A121611810110)
   INSENT: -0=[-0+2171-315 L/10/15/31/12/01/8/19/
   twent; -8= (-81-61-21-71-11011151317121011813110)
   INSENT:11= C-8LQ1-2LAL3L5 L1011 15131A121Q1) 1810/1011
   INSENT; -0= (-01-81-61-21-1-15-15-101/1513/17 12161/8/101/1)
   Time complexity, Best: - acu) Unerase: O(Us) coast: - O(Us)
```