	· ANALYSIS OF Date
	JUNALYSIS C.
	LSUEDO CODE:-
Tr	sertion - sort (A):
1	for J=2 to A·length Key: A[J]
3	. The smiled sequence
4	// insert A[]] into the solite A[1-1-1]
	while i >0 and A[i] > Key A[i+1] = A[i]
5	ALI+IJ=ALIJ Blow to reitored DA i=i-1 Blow to reitored DA
8	ACi+1] = KeY
	· DRY Running:
	· WORST CASE:-
-	4. [4.3.2.1]
	1ST TTERATION OF FOR:-
1-	J=2 KeY=3
4-	(=1

- wile
1st iteration of while 5. While 1>0 and 4>3 A 5>1=4 A=54,4,2,17
5. While 170 - 14143
-7. i=0 Lubile
2nd iteration of while
5. While 010
6.
T. T
s 8. A[1]: 3 → A.[3.4,2,1]
S 8. A[1]: 3 -> A: 1379
The same of the sa
2 AND ITERATION OF FOR:-
and lichting
1. T=3
A HEA = a
1 4 L
1st iteration of while
5- While 2>0 and 4>2
The state of the s
2nd iteration of while and 3>2
2nd Iterations of 3>2 5. While 1>0 and 3>2 6. A[a] = 3 - A = [3 = 3 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 +
5. White 170 A-13.3.4.470 16464
6- A(a)-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3
3rd iteration of while
111110
6.
7.
8- A[1]·2 - A·[2·3·4·1]
8- AL13-2
394

	2
-	3RD ITERATION OF FOR:-
	Tale (State of State)
1.	
9.	KeY-1
4-	[-3
1	while 3>0 and 4>1
	While 3>0 and 4>1
	ALGI
	t = 2
100	marking of while
2r	while 2>0 and 3>1
+	A[3] = 3 - A. [2:3:3:4]
	i-1
24	d iteration of while
-	while In and all
	A[2] = 2 - A . [2,2,3,4]
	· - D
	MORST CASETA
th	iteration of while
-	while 0>0
	The state of the s
	The state of the s
	A[1] = 1 - A - [1 - 2 - 3 - 4]
	1. A. F.
	4TH ITERATION OF FOR:-
	1-6

Line	Time/ instruction	(00013.	(best case)
1	C	ntann & man	
	11000		n-l
3	C	n-1	n-1
3	0	n-1	
			n-1
4	C	n-1	
~		2 T=[n(n+1) - 1]	n-lead acad the
5	C	J=2 2	
6	C	£ 1-1- n(n-1)	0
		J=1 1	0
F	С	£ 3-1, n(n-1)	and via moderation of
in the k	Tunible lin	3.4	n-1
8	C	n-1	CAR TO A
T(n)	+1	$\frac{n(n-1)}{2} + n-1$	$\frac{1}{2}$ + $\frac{1}$
T(n)		n tn tn -3 tn3+n-2	
T(n)	, C 41	1-3+n3+M-2+n2	-M+n°-N
TIn)	7.(8	$\frac{n-6+3n^2-n-3}{2}$	
			Teacher's Signature.
			Scanned with CamScanner

$T(n) \cdot c \left[\frac{3n^2 + 7n - 8}{2} \right]$
T(n). c[Kin, + Kzn + K3]
· The worst case time complexity of insertion sout is $O(n^2)$
· Insertion soit in worst case grows quadratically
Means that, maximum time which a code can take * BEST CASE T(n):-
T(n), [n+n-1+n-1+n-1]c T(n), [sn-4]c
T(n) - [Kin+K2]c
· The best case time complexity of insertion sort is O(n)
· Insertion sout in best case grows linearly
· Means, that minimum time which a code · can take ·