Pseudocode and Algorithms Practice Questions

```
1.  numbers = [5, 2, 9, 1]
2.  n = LENGTH(numbers)
3.
4.  OUTPUT "Original list: ", numbers
5.
6.  swapped = TRUE
7.
8.  WHILE swapped = TRUE
9.      swapped = FALSE
10.
11.     FOR i = 0 TO n - 2
12.         IF numbers[i] > numbers[i + 1] THEN
13.             temp = numbers[i]
14.             numbers[i] = numbers[i + 1]
15.             numbers[i + 1] = temp
16.             swapped = TRUE
17.         END IF
18.     END FOR
19.
20. END WHILE
21.
22. OUTPUT "Sorted list: ", numbers
```

Question 1

Desk check the above sorting algorithm [6 marks]

Question 1 Marking Guide

Criterion	Descriptors	Marks
Desk Check Process	Complete desk check showing every pass and swap until sorted;	6
	Complete desk check with one error	5
	Complete desk check with two errors	4
	Complete desk check with three errors	3
	Complete desk check with four errors	2
	Complete desk check with five errors	1
	Complete desk check with more than five errors	0

Sample answer

Line	numbers	i	temp	swapped	Output
1	[5, 2, 9, 1]				
2	[5, 2, 9, 1]				
3	[5, 2, 9, 1]				Original list: [5, 2, 9, 1]
4	[5, 2, 9, 1]			TRUE	
6	[5, 2, 9, 1]			FALSE	
7	[5, 2, 9, 1]	0		FALSE	
9	[5, 2, 9, 1]	0	5	FALSE	
10	[2, 5, 9, 1]	0	5	FALSE	
12	[2, 5, 9, 1]	0	5	TRUE	
7	[2, 5, 9, 1]	1		TRUE	
7	[2, 5, 9, 1]	2		TRUE	
9	[2, 5, 9, 1]	2	9	TRUE	
10	[2, 5, 1, 9]	2	9	TRUE	
12	[2, 5, 1, 9]	2	9	TRUE	
6	[2, 5, 1, 9]			FALSE	
7	[2, 5, 1, 9]	0		FALSE	
7	[2, 5, 1, 9]	1		FALSE	
9	[2, 5, 1, 9]	1	5	FALSE	
10	[2, 1, 5, 9]	1	5	FALSE	
12	[2, 1, 5, 9]	1	5	TRUE	
7	[2, 1, 5, 9]	2		TRUE	
6	[2, 1, 5, 9]			FALSE	
7	[2, 1, 5, 9]	0		FALSE	
9	[2, 1, 5, 9]	0	2	FALSE	
10	[1, 2, 5, 9]	0	2	FALSE	
12	[1, 2, 5, 9]	0	2	TRUE	
7	[1, 2, 5, 9]	1		TRUE	
7	[1, 2, 5, 9]	2		TRUE	
6	[1, 2, 5, 9]			FALSE	
7	[1, 2, 5, 9]	0		FALSE	
7	[1, 2, 5, 9]	1		FALSE	
7	[1, 2, 5, 9]	2		FALSE	
16	[1, 2, 5, 9]			FALSE	Sorted list: [1, 2, 5, 9]