## Test 4

Due Aug 13 at 11:59pm Points 20 Questions 20 Time Limit 15 Minutes
Allowed Attempts 2

## **Instructions**

You will get 20 questions for each attempt. You will have 15 minutes to answer the T/F and MC questions on each attempt. You will be able to take the test a second time if you choose. Your score will be that of the last attempt completed.

Take the Quiz Again

## **Attempt History**

	Attempt	Time	Score
LATEST	Attempt 1	15 minutes	13 out of 20

Score for this attempt: **13** out of 20 Submitted Aug 13 at 8:24pm This attempt took 15 minutes.

	Question 1 1 / 1 pts	i
	I have an algorithm that runs in $O(N^2)$ , where N is the size of the problem. For N = 100, the time the algorithm runs is 1 minute. How long does the algorithm take for N=1000 most likely?	
	Same time	
	10 minutes	
Correct!	• 100 minutes	
	1000 minutes	
	O You haven't given enough information. I can't tell.	

	Question 2	1 pts
	The following is an algorithm to average a series of numbers read from the keyboard:	
	Prompt the user for the number of items;	
	Read the number of items (n) from the keyboard;	
	For each item,	
	Read the number from the keyboard;	
	Add it to the sum;	
	Divide sum by the current total numbers;	
	Print the result to the screen;	
	Which of the follow expressions is the correct Big-O complexity of the algorithm?	
	$\bigcirc$ O(N <sup>2</sup> )	
	O(N+4)	
Correct!	<ul><li>O(N)</li></ul>	
	O(4N)	
	None of the above	

## Question 3 If algorithm A requires 2n + 1 basic operations to process an input of size n, and Algorithm B requires 3n + 2 basic operations to process the same input, algorithm A is considered to be more efficient than Algorithm B. You Answerd True False

Question 4 1 / 1 pts

	Binary search splits the input in half for each iteration of the algorithm, like searchin word in a paper dictionary. Open it in the middle and then select the correct side ar So its runtime complextiy is $Big-O(N^2)$ .	-
	○ True	
Correct!	False	
	Question 5	1 / 1 pts
	It is called asymptotic complexity analysis because	
	It is the same thing as a limit	
	We want to get the exact number of execution of algorithm steps	
Correct!	We want to use the largest values possible to even out small difference in algorithms	
	All the above	
	Question 6	1 / 1 pts
	Linear search has time complexity $O(n \log n)$ .	
	○ True	
Correct!	False	
	Question 7	0 / 1 pts
	We call it Big-O runtime complexity because we do not care about memory usage, execution of the instructions.	just the

rect Answer	○ True
u Answered	False
	Question 8 1 / 1 pts
	Order of magnitude estimates doesn't work well if we are only interested in behavior for very small data sets.
Correct!	True
	○ False
	Question 9 1 / 1 pts
	The expression, 4N <sup>2</sup> –2N+1 is
	Linear (degree 1)
Correct!	Quadratic (degree 2)
	Cubic (degree 3)
	○ Logarithmic(O(log N))
	Question 10 0 / 1 pts
	We call it Big-O runtime complexity because we do not care about memory usage, just the execution of the instructions.
rect Answer	○ True
u Answered	False

	Question 11	1 / 1 pt
	A sorting algorithm can be used to arrange a set of in order.	
	numeric values, descending	
	strings, descending	
	strings, ascending	
	numeric values, ascending	
l	All of the above.	
	7 m of the above.	

	Question 12	/1 pts
	Which search algorithm steps sequentially through an array, comparing each item wi search value?	ith the
Correct!	• linear	
	binary	
	bubble	
	None of the above	

Question 13	
The quicksort algorithm works on the basis of	

three pivots.

two sublists and a pivot.

two pivots and a sublist.

three sublists.

None of the above.

Question 14

A(n) \_\_\_\_\_ search is more efficient than a(n) \_\_\_\_ search.

string, double

linear, binary

integer, double

binary, linear

None of the above.

The advantage of a linear search is that

A) it can be used on unordered data.

B) it is efficient.

C) it is fast.

D) it is simple.

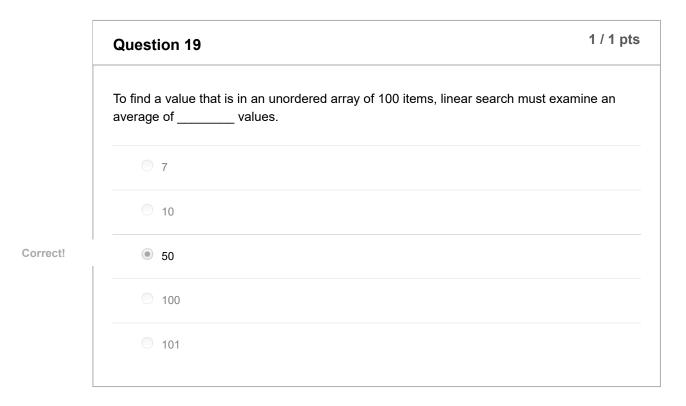
You Answered

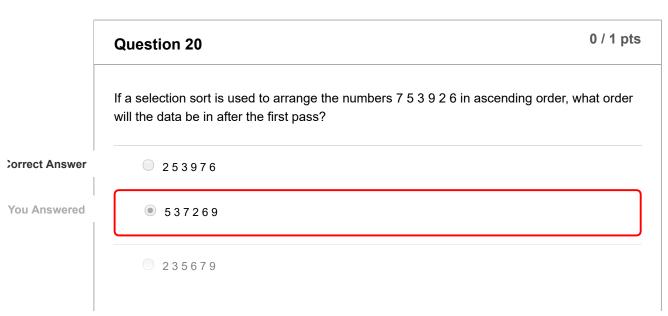
Correct Answer	E) both A and D

	Question 16	/ 1 pts
	If the item being searched for is not in the array, binary search stops looking for it and reports that it is not there when	
You Answered	Boolean variable found equals false.	
	it finds a value larger than the search key.	
orrect Answer	array index first > array index last.	
	Boolean variable found equals true.	
	it has examined all the elements in the array.	

	Question 17 0 /	1 pts
	To determine that a item is <b>not</b> in an unordered array of 100 items, linear search must examine an average of values.	
	O 7	
	O 10	
	O 50	
Correct Answer	0 100	
You Answered	<ul><li>101</li></ul>	
	No answer text provided.	

	Question 18	I / 1 pts
	When searching for an item in an unordered set of data, binary search can find the ite more quickly than linear search.	em
	○ True	
Correct!	False	





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None	e of the above.	ve.		

Quiz Score: 13 out of 20