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.

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	8 minutes	18 out of 20
LATEST	Attempt 2	8 minutes	18 out of 20
	Attempt 1	15 minutes	13 out of 20

Score for this attempt: **18** out of 20
Submitted Aug 13 at 8:37pm
This attempt took 8 minutes.

Question 1

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 2

1 / 1 pts

Linear search has time complexity O($n\log n$).

- ( ) True

Correct!

- False

Question 3

1 / 1 pts

Binary search splits the input in half for each iteration of the algorithm, like searching for a word in a paper dictionary. Open it in the middle and then select the correct side and repeat. So its runtime complextiy is Big-O(N^2).

- True

Correct!

- False

Question 4

1 / 1 pts

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.

- True

Correct!

- False

Question 5

1 / 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?

- O(N^2)
- O(N+4)

Correct!

- O(N)
- O(4N)
- None of the above

Question 6

1 / 1 pts

We call it Big-O runtime complexity because we do not care about memory usage, just the execution of the instructions.

Correct!

- True
- False

Question 7

1 / 1 pts

The expression, $4N^2–2N+1$ is

- Linear (degree 1)

Correct!

- Quadratic (degree 2)
- Cubic (degree 3)
- Logarithmic (O(log N))

Question 8

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 9

1 / 1 pts

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
- You haven't given enough information. I can't tell.

Question 10

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 11

1 / 1 pts

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.
- Correct! E) both A and D

Question 12

0 / 1 pts

To find a value that is in an unordered array of 100 items, linear search must examine an average of _____ values.

- 7
- 10
- Correct Answer 50
- You Answered 100
- 101

Question 13

1 / 1 pts

If a bubble sort is used to arrange the numbers 7 5 3 9 2 6 in ascending order, what order will the data be in after the first pass?

Correct!

- (•) 5 3 7 2 6 9
- ( ) 5 7 3 9 2 6
- ( ) 2 5 3 9 7 6
- ( ) 2 3 5 6 7 9
- ( ) None of the above.

Question 14

1 / 1 pts

A(n) _____ search is more efficient than a(n) _____ search.

- ( ) string, double
- ( ) linear, binary
- ( ) integer, double

Correct!

- (•) binary, linear
- ( ) None of the above.

Question 15

1 / 1 pts

If a selection sort is used to arrange the numbers 7 5 3 9 2 6 in ascending order, what order will the data be in after the first pass?

Correct!

- (•) 2 5 3 9 7 6

5 3 7 2 6 9

2 3 5 6 7 9

5 7 3 9 2 6

None of the above.

Question 16

1 / 1 pts

When sorting an array of objects or structures, one must decide which data item to sort on.

Correct!

True

False

Question 17

1 / 1 pts

A sorting algorithm can be used to arrange a set of _____ in _____ order.

numeric values, descending

strings, descending

strings, ascending

numeric values, ascending

Correct!

All of the above.

Question 18

1 / 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

- Boolean variable found equals false.
- it finds a value larger than the search key.

Correct!

- array index first > array index last.
- Boolean variable found equals true.
- it has examined all the elements in the array.

Question 19

1 / 1 pts

The quicksort algorithm works on the basis of

- three pivots.

Correct!

- two sublists and a pivot.
- two pivots and a sublist.
- three sublists.
- None of the above.

Question 20

0 / 1 pts

The quicksort algorithm can be used to

- perform binary search on arrays.

Correct Answer

- sort lists stored in arrays.

quickly sort and search arrays.

You Answered

All of the above

None of the above.

Quiz Score: **18** out of 20