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 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 2

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 3

0 / 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.

You Answered

- True

Correct Answer

- False

Question 4

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 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, just the execution of the instructions.

Correct Answer

- True

You 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, $4N^2–2N+1$ 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.

Correct Answer

- True

You Answered

- False

Question 11

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
- All of the above.

Correct!

Question 12

1 / 1 pts

Which search algorithm steps sequentially through an array, comparing each item with the search value?

Correct!

- linear
- binary
- bubble
- None of the above

Question 13

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 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

0 / 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.

You Answered

D) it is simple.

Correct Answer

E) both A and D

Question 16

0 / 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.

Correct 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 **not** in an unordered array of 100 items, linear search must examine an average of _____ values.

7

10

50

Correct Answer

100

You Answered

101

No answer text provided.

Question 18

1 / 1 pts

When searching for an item in an unordered set of data, binary search can find the item more quickly than linear search.

- True
- Correct! False

Question 19

1 / 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! 50
- 100
- 101

Question 20

0 / 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 Answer: 2 5 3 9 7 6
- You Answered: 5 3 7 2 6 9
- 2 3 5 6 7 9

5 7 3 9 2 6

None of the above.

Quiz Score: **13** out of 20