http://www.na.edu moodle@na.edu

NORTH AMERICAN UNIVERSITY

INSPIRATION INNOVATION GLOBAL COMPETENCE

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Started on	Sunday, 27 January 2019, 2:53 PM
State	Finished
Completed on	Sunday, 27 January 2019, 3:13 PM
Time taken	19 mins 22 secs
Grade	**9.00** out of 10.00 (**90**%)

Question 1

Correct

Mark 1.00 out of 1.00

What is wrong with the following recursive function?

```
def Fibonacci(n):
   if (n == 0): return 0
   if (n == 1): return 1
   return Fibonacci(n - 1) + Fibonacci(n - 2)
```

Select one:

○ a. Recursive part should be

return Fibonacci(n) + Fibonacci(n - 1)

○ b. There cannot be two base cases

● c. Nothing ✓

○ d. It calculates only even Fibonacci numbers

Your answer is correct.

The correct answer is: Nothing

Question 2

Correct

Mark 1.00 out of 1.00

Exponential functions a^n have different orders of growth for different a's

Select one:

● True ✓

○ False

The correct answer is 'True'.

Question 3

Correct

Mark 1.00 out of 1.00

What is the complexity of printing the first two elements of a list?

Select one:

● a. O(1) ✓

○ b. O(2)

○ c. O(N)

○ d. O(N^{2})

Your answer is correct.

The correct answer is: O(1)

Question 4

Correct

Mark 2.00 out of 2.00

Which one is not a definition of the algorithm?

Select one:

○ a. Defining steps for performing a task

● b. Set of instructions that should run in finite time ✓

○ c. Recipe for getting something done

○ d. Instructions

Your answer is correct.

The correct answer is: Set of instructions that should run in finite time

Question 5

Correct

Mark 1.00 out of 1.00

What is the running time of the following algorithm?

```
def surprise(A,B):
   while (B != 0):
      remainder = A % B
      A = B
      B = remainder
   return A
```

Select one:

○ a. O(N)

○ b. O(1)

● c. O(log N) ✓

○ d. O(A%B)

Your answer is correct.

The correct answer is: O(log N)

Question 6

Correct Mark 2.00 out of 2.00

What is the complexity of the following algorithm?

```
for (int count = 1; count < 2*n; count++)
  for (int count2 = 1; count2 < 2*n; count2 = count2 + 1)
  {
     // some sequence of O(1) steps
  }
```

Select one:

○ a. O(1)

● b. $O(N^2)$ ✓

○ c. O(N)

○ d. $O(4N^2)$

Your answer is correct.

The correct answer is: $O(N^2)$

Question 7

Incorrect

Mark 0.00 out of 1.00

Sometimes the constants that you ignore in Big O notation are important. For example, suppose you have two algorithms that can do the same job. The first requires 1,500 × N steps, and the other requires 60 × N^2 steps. For what values of N would you choose the first algorithm?

Select one:

● a. N > 50 ✗

○ b. N > 1500

○ c. N < 25

○ d. N > 25

Your answer is incorrect.

The correct answer is: N > 25

Question 8

Correct

Mark 1.00 out of 1.00

A good algorithm must have?

Select one or more:

☐ a. Loops

☑ b. Correctness ✓

☑ c. Efficiency ✓

☐ d. Functions

☑ e. Maintainability ✓

Your answer is correct.

The correct answers are: Correctness, Maintainability, Efficiency

◀ Chapter 2

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Homework 1 ▶