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**NORTH AMERICAN
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INSPIRATION INNOVATION GLOBAL COMPETENCE



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Started on Sunday, 3 March 2019, 11:02 PM

State Finished

Completed on Sunday, 3 March 2019, 11:20 PM

Time taken 18 mins 20 secs

Grade **7.00** out of 10.00 (**70%**)

Question 1

Correct

Mark 2.00 out of 2.00

An array consists of N elements. We want to create a heap using the elements. The time complexity of building a heap will be in order of

Select one:

- ☐ a. $O(N \cdot \log(N) \cdot \log(N))$
- ☒ b. $O(N \cdot \log N)$ ✓
- ☐ c. $O(N \cdot N)$
- ☐ d. $O(N \cdot N \cdot \log N)$

Your answer is correct.

The correct answer is: $O(N \cdot \log N)$

Question 2

Correct

Mark 1.00 out of 1.00

Which one is not an $O(N^2)$ algorithm?

Select one:

- ☐ a. Selection Sort
- ☐ b. Bubble Sort
- ☐ c. Insertion Sort
- ☒ d. Heap Sort ✓

Your answer is correct.

The correct answer is: Heap Sort

Question 3

Correct

Mark 2.00 out of 2.00

Heap can be used as

Select one:

- ☐ a. A decreasing order array
- ☒ b. Priority queue ✓
- ☐ c. None of the options
- ☐ d. All of the options
- ☐ e. Stack

Your answer is correct.

The correct answer is: Priority queue

Question 4

Correct

Mark 1.00 out of 1.00

Heap-sort is in-place sorting algorithm.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 5

Incorrect

Mark 0.00 out of 1.00

Which of the following is not a variety of transform and conquer strategy?

Select one:

- ☒ a. None of the above ✖
- ☐ b. Variable size decrease
- ☐ c. Instance Simplification
- ☐ d. Problem Reduction
- ☐ e. Representation Change

Your answer is incorrect.

The correct answer is: Variable size decrease

Question 6

Incorrect

Mark 0.00 out of 1.00

Heaps and heap-sort is a good example of:

Select one:

- ☐ a. None of the options
- ☐ b. Problem Reduction variety of transform and conquer strategy
- ☐ c. Representation Change variety of transform and conquer strategy
- ☐ d. Instance Simplification variety of transform and conquer strategy
- ☒ e. All of the options ✖

Your answer is incorrect.

The correct answer is: Representation Change variety of transform and conquer strategy

Question 7

Incorrect

Mark 0.00 out of 1.00

Rotations in AVL trees is a good example of:

Select one:

- ☒ a. All the options ✖
- ☐ b. None of the options
- ☐ c. Problem Reduction variety of transform and conquer strategy
- ☐ d. Instance Simplification variety of transform and conquer strategy
- ☐ e. Representation Change variety of transform and conquer strategy

Your answer is incorrect.

The correct answer is: Instance Simplification variety of transform and conquer strategy

Question 8

Correct

Mark 1.00 out of 1.00

Which variety of transform and conquer approach is used by the algorithm that computes the LCM using Euclid's algorithm to compute GCD?

Select one:

- ☐ a. Instance Simplification variety of transform and conquer strategy
- ☐ b. Representation Change variety of transform and conquer strategy
- ☒ c. Problem Reduction variety of transform and conquer strategy ✓
- ☐ d. None of the options

Your answer is correct.

The correct answer is: Problem Reduction variety of transform and conquer strategy

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