Status	Finished
Started	Wednesday, 9 April 2025, 6:38 PM
Completed	Wednesday, 9 April 2025, 6:43 PM
Duration	5 mins 7 secs
Marks	7.00/10.00
Grade	**3.50** out of 5.00 (**70**%)

Question 1

Correct

Mark 1.00 out of 1.00

What are the time complexities of Max-Heapify(A, i) and Build-Max-Heap(A) with n elements in the array A with index i indicating the root of heap?

a. O(nlogn) and O(logn)

b. O(logn) and O(logn)

c. O(logn) and O(n) ✓

d. O(nlogn) and O(nlogn)

Your answer is correct.

The correct answer is:
O(logn) and O(n)

Question 2

Correct

Mark 1.00 out of 1.00

With 10 nodes, i.e., v_1, v_2, ..., v_{10}, how many distinct simple graphs can be drawn?

a. None of these

b. 2^9

c. 2^45 ✓

d. 2^10

Your answer is correct.

The correct answer is:
2^45

Question 3

Correct

Mark 1.00 out of 1.00

Assume that a set of square numbers are to be stored in a hash table using one of the two hash functions, h1(k) = 2k mod 10 and h2(k) = k mod 10. Using which hash function, collision will be more irrespective of the number of the keys to be inserted into the hash table?

a. h1() ✓

b. Collision will not be there if number of keys are less than or equal to 10.

c. h2()

d. Both has a same number of collisions.

Your answer is correct.

The correct answer is: h1()

Question 4

Incorrect

Mark 0.00 out of 1.00

If a heap with 11 nodes are stored in an adjacency matrix, then how many rows will be there having exactly one 1's in the matrix?

a. None of These

b. 10

c. 6

d. 5 ✗

Your answer is incorrect.

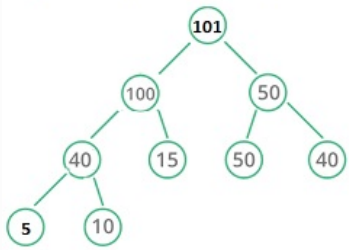
The correct answer is: 6

Question 5

Correct

Mark 1.00 out of 1.00

Consider the following heap that is stored in an array A with index starting from 0. Before and after a single Max-Heap-Delete(A) call, what will be index of 10?



a. 8 and 3 ✓

b. 3 and 6

c. 3 and 0

d. 8 and 8

Your answer is correct.

The correct answer is:
8 and 3

Question 6

Incorrect

Mark 0.00 out of 1.00

If a max-heap is used to perform sorting in ascending order, then which of the following is not performed?

a. Build-Heap

b. Reverse the deleted items. ✗

c. Delete-Root

d. None of these.

Your answer is incorrect.

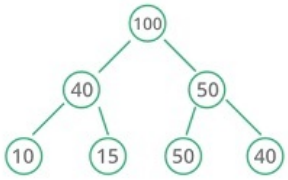
The correct answer is:
None of these.

Question 7

Correct

Mark 1.00 out of 1.00

Consider that the following heap is stored in an array, where index starts from 0. What is the index of 15?



a. 8

b. 3

c. 6

d. 4 ✓

Your answer is correct.

The correct answer is: 4

Question 8

Correct

Mark 1.00 out of 1.00

Best and average case delete complexity into a binary search tree that already has n elements are:

a. O(1), O(n)

b. O(n), O(n)

c. O(1), O(log n)

d. O(n), O(log n) ✓

Your answer is correct.

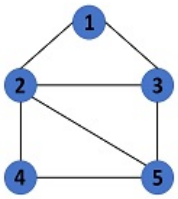
The correct answer is:
O(n), O(log n)

Question 9

Correct

Mark 1.00 out of 1.00

Consider the following graph stored using an adjacency matrix. Which of the following true?



a. Not Hamiltonian, but Euler

b. Not Euler, but Hamiltonian ✓

c. Neither Euler nor Hamiltonian

d. Both Euler and Hamiltonian

Your answer is correct.

The correct answer is: Not Euler, but Hamiltonian

Question 10

Incorrect

Mark 0.00 out of 1.00

Best and average case insert complexity into a binary search tree that already has n elements are:

a. O(1), O(n)

b. O(logn), O(n) ⊗

c. O(1), O(log n)

d. O(1), O(1)

Your answer is incorrect.

The correct answer is: O(1), O(log n)

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