Started on	Thursday, 2 March 2023, 09:17
State	Finished
Completed on	Thursday, 2 March 2023, 09:43
Time taken	26 mins 21 secs
Grade	**7.50** out of 13.00 (**58%**)

Question **1**

Correct

Mark 1.00 out of 1.00

Suppose that the sequence P R I O * R * * I * T * Y * * * Q U E * * * U * E (where a letter means *insert* and an asterisk means *remove the maximum)* is applied to an initially empty Priority Queue. Give the sequence of letters returned by the *remove maximum*-operations.

(Your answer should contain only letters (case-insensitive) without spaces)

Answer: RRPOTYIIUQEU ✓

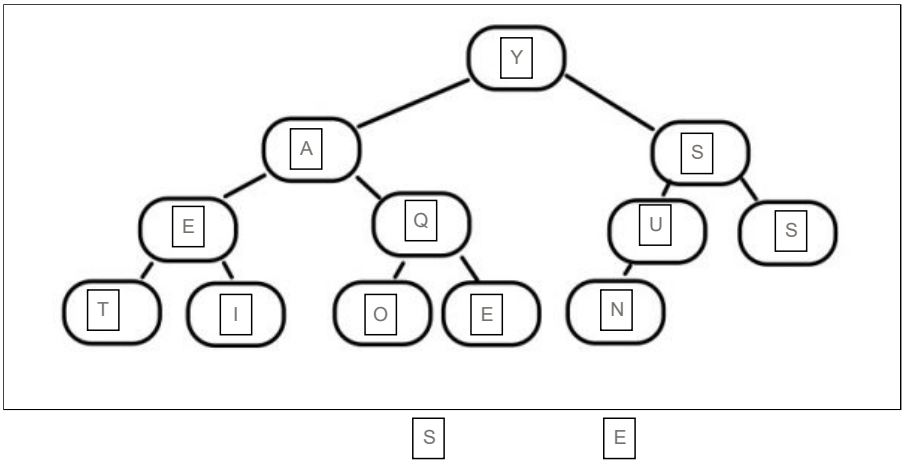
The correct answer is: RRPOTYIIUQEU

Question **2**

Partially correct

Mark 0.17 out of 1.00

Give the heap that result from inserting the keys E A S Y Q U E S T I O N into an initially empty max-oriented heap



Your answer is partially correct.

You have correctly selected 2.

Question 3

Incorrect

Mark 0.00 out of 1.00

Suppose that your application will have a huge number of *insert*-operations, but only a few *remove maximum*-operations. Which priority-queue implementation do you think would be most effective:

Select one:

- a. Heap ✗
- b. Unordered array
- c. Ordered array

Your answer is incorrect.

The correct answer is: Unordered array

Question 4

Partially correct

Mark 0.50 out of 1.00

Suppose that your application will have a huge number of *find the maximum*-operations but only a relatively small number of *insert* and *remove the maximum*-operations. Which priority-queue implementation do you think would be the most effective?

Select one or more:

- a. Unordered array
- b. Heap
- c. Ordered array ✓

Your answer is partially correct.

You have correctly selected 1.

The correct answers are: Heap, Ordered array

Question 5

Incorrect

Mark 0.00 out of 1.00

Consider a max-heap containing duplicate keys. What happens if a given key is told to *sink* but both of its children are equal (but larger than the key in question)?

Select one:

- a. The key will sink in the direction with fewer nodes to balance the tree
- b. The key will sink in the direction where a grand-child is larger ✗
- c. The key will sink to the left
- d. The key will sink to the right

Your answer is incorrect.

The correct answer is: The key will sink to the left

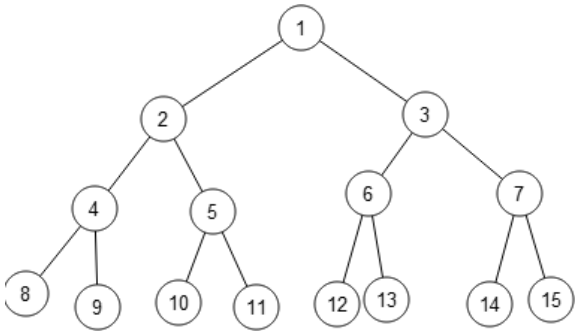
Question 6

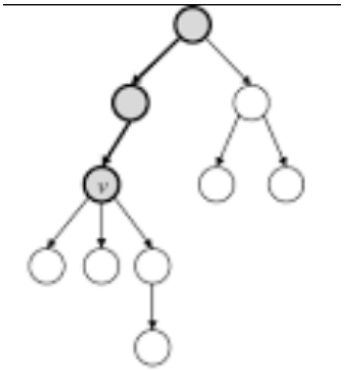
Correct

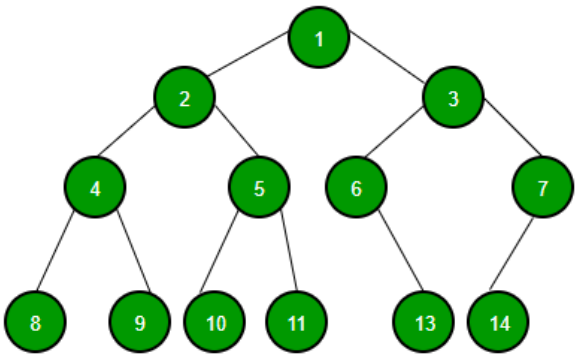
Mark 1.00 out of 1.00

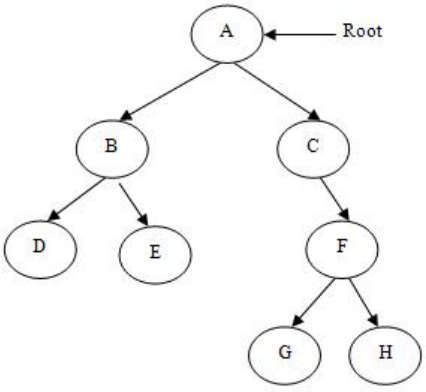
Select the complete tree(s)

Select one or more:

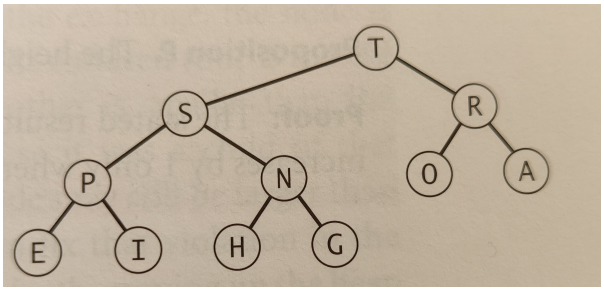
a. 

b. 

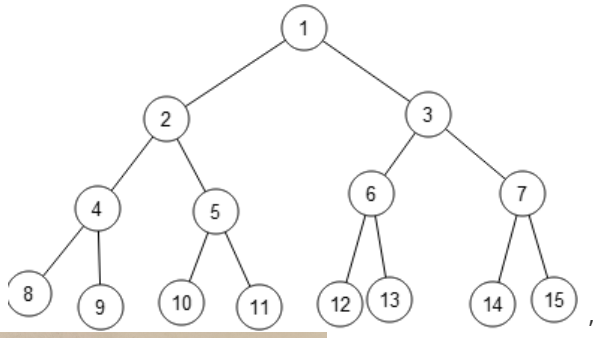
c. 

d. 

e.



Your answer is correct.

The correct answers are: 

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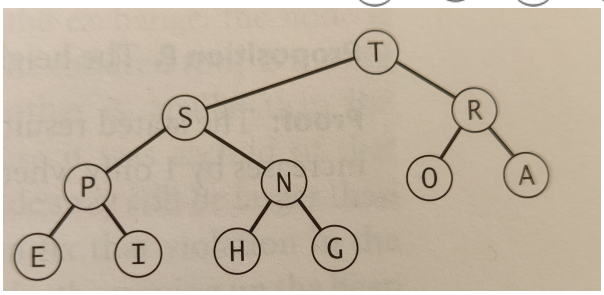


Question 7

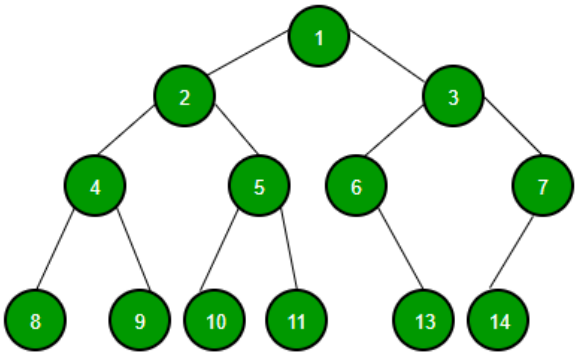
Partially correct

Mark 0.33 out of 1.00

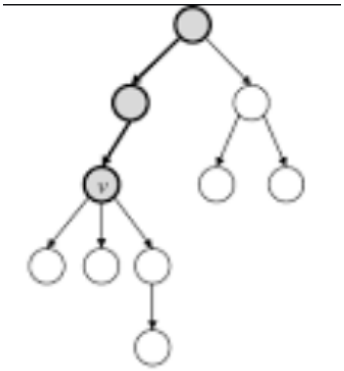
Select the binary tree(s)

Select one or more:

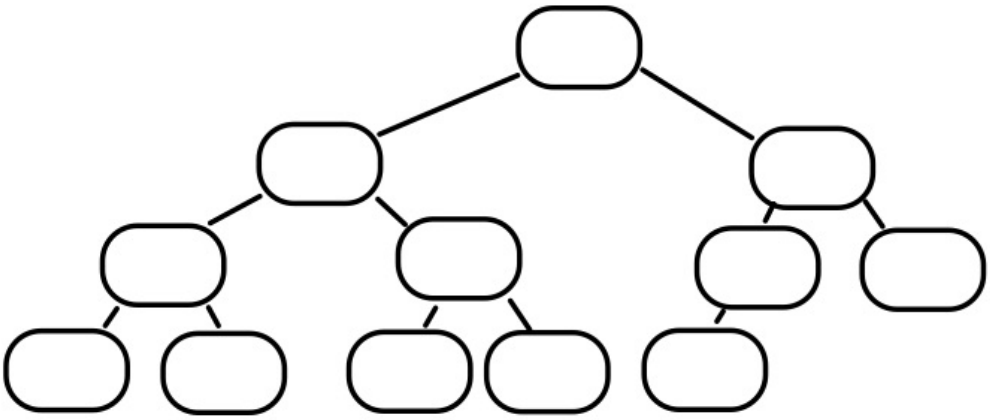
a.



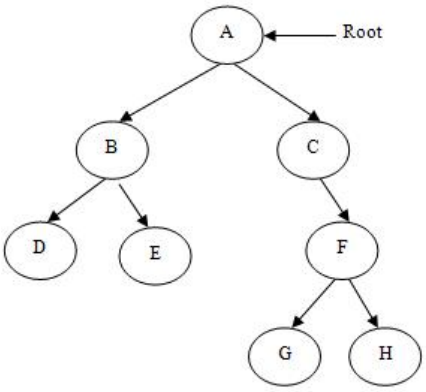
b.



c.

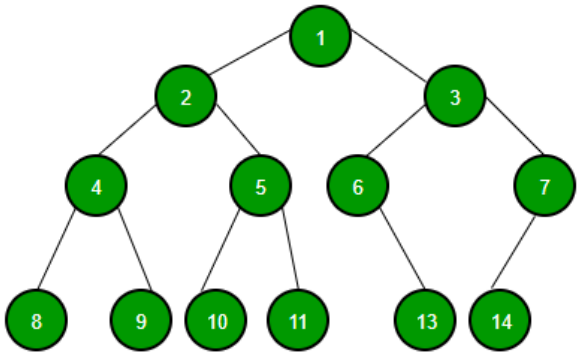


d.

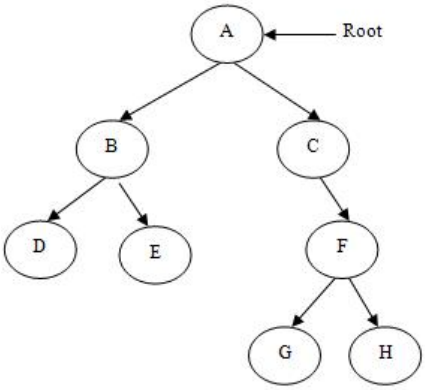


Your answer is partially correct.

You have correctly selected 1.



The correct answers are: ,



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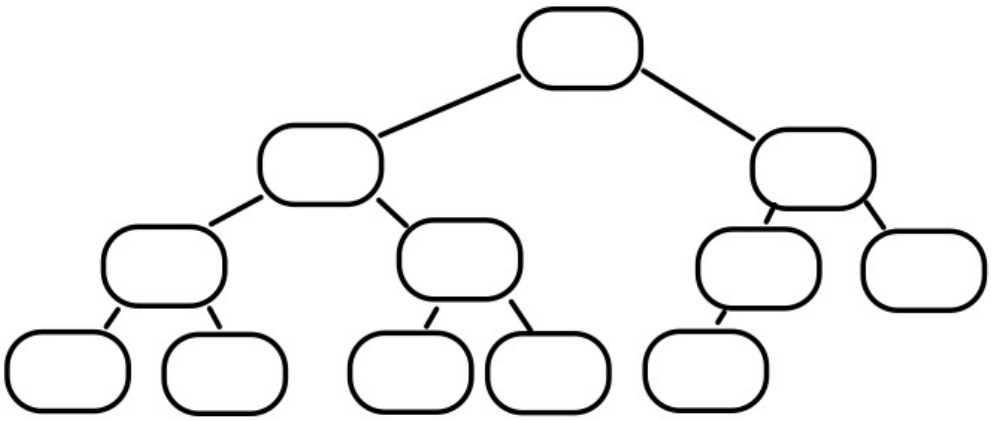


Question 8

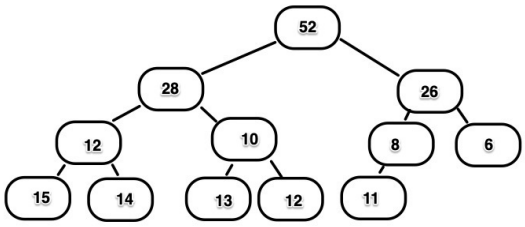
Correct

Mark 1.00 out of 1.00

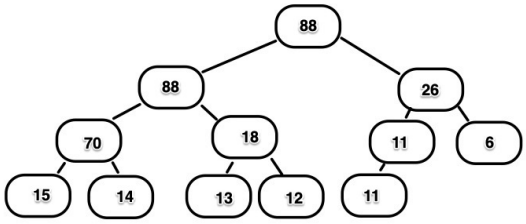
Select the heap-ordered tree(s)

Select one or more:

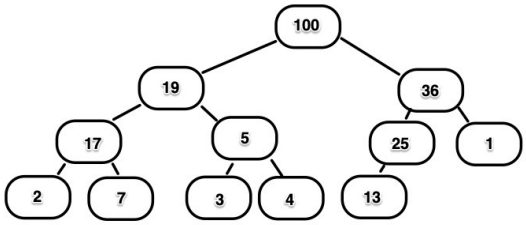
a.



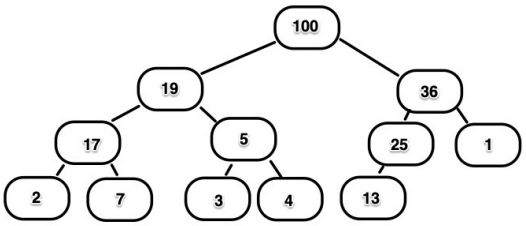
b. ✓



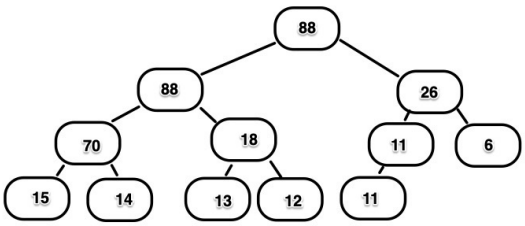
c. ✓



Your answer is correct.



The correct answers are: ,



Question 9

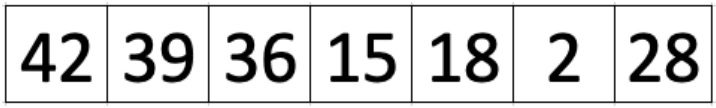
Partially correct

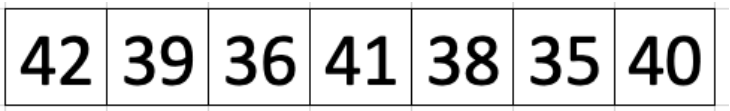
Mark 0.50 out of 1.00

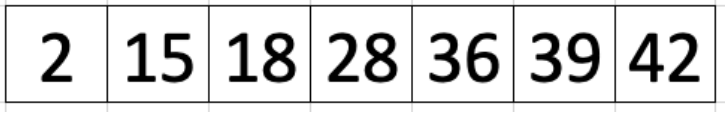
Select the max-heap-ordered array(s)

Select one or more:

- [x] a. 

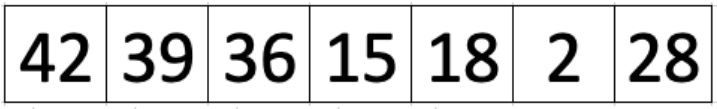
- [ ] b. 

- [ ] c. 

- [ ] d. 

Your answer is partially correct.

You have correctly selected 1.

The correct answers are: 

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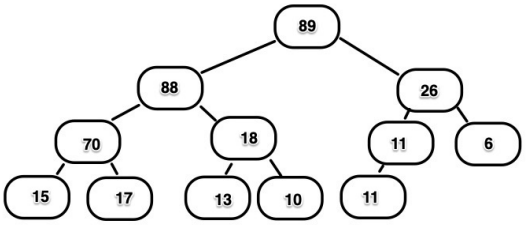
Question 10

Correct

Mark 1.00 out of 1.00

Which array corresponds to the given tree:



Select one:

a. | 89 | 88 | 26 | 70 | 18 | 11 | 6 | 15 | 17 | 13 | 10 | 11 |

b. | 15 | 17 | 70 | 13 | 10 | 18 | 88 | 11 | 11 | 6 | 26 | 89 |

c. | 89 | 88 | 70 | 15 | 17 | 18 | 13 | 10 | 26 | 11 | 11 | 6 |

Your answer is correct.

The correct answer is: | 89 | 88 | 26 | 70 | 18 | 11 | 6 | 15 | 17 | 13 | 10 | 11 |

Question 11

Correct

Mark 1.00 out of 1.00

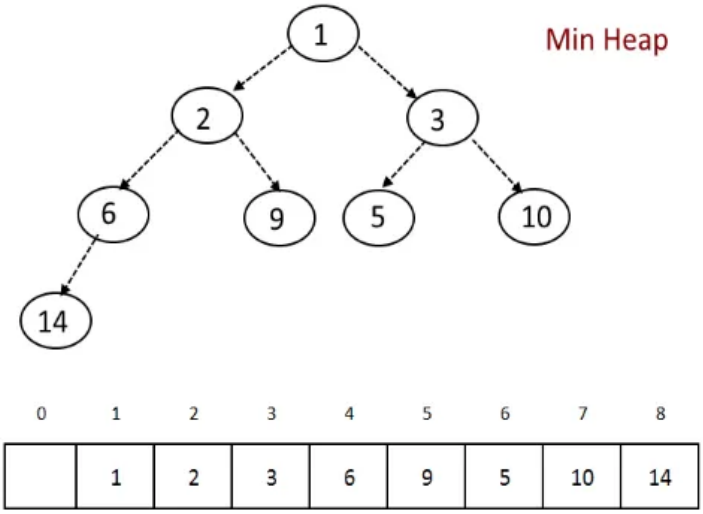
True or false:

A heap is always in sorted order in its array representation?

Select one:

- True
- False ✓

Consider the below heap and its corresponding array representation.
The sequence of numbers in the array are not sorted even though the tree is correctly heap-ordered



The correct answer is 'False'.

Question 12

Incorrect

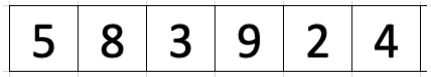
Mark 0.00 out of 1.00

Considering a max-heap, which of the following arrays is the result of:

insert(5)
insert(8)
insert(3)
delmax()
insert(9)
insert(2)
insert(4)

Select one:

a. 

b. 

c. 

d. 

Your answer is incorrect.

The correct answer is: 

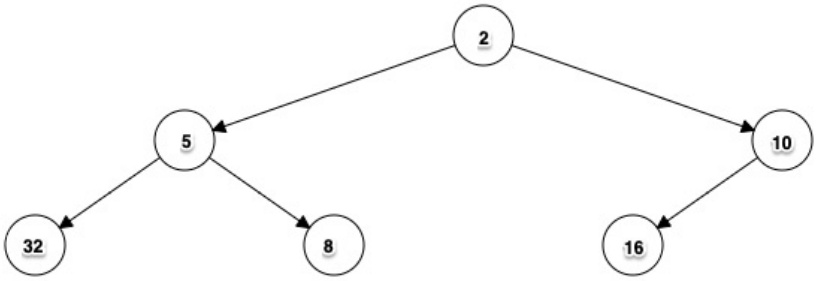
Question 13

Correct

Mark 1.00 out of 1.00

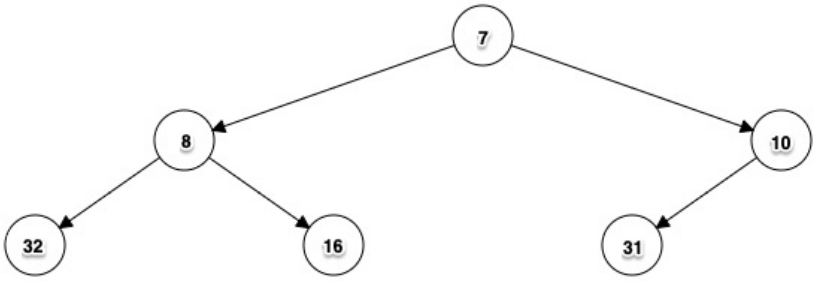
Considering the below min-heap. What does it look like after conducting the following operations:

delMin()
insert(7)
insert(31)
delMin()
insert(5)

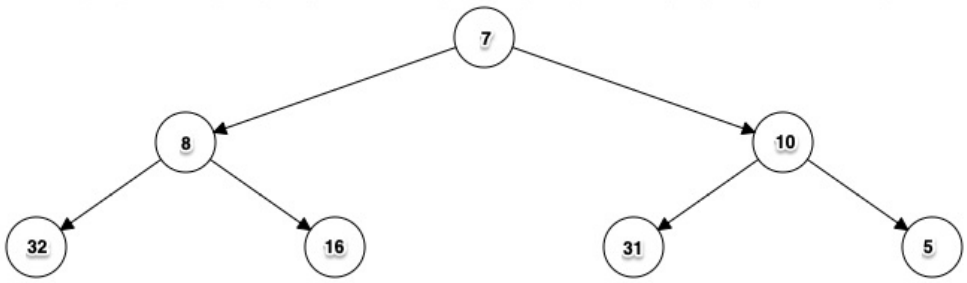


Select one:

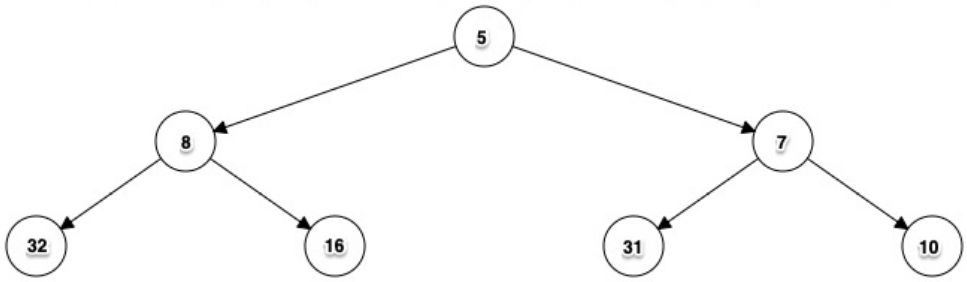
a.



b.



c. ✓



Your answer is correct.

The correct answer is: