Started on	Thursday, 2 March 2023, 09:54
State	Finished
Completed on	Thursday, 2 March 2023, 10:03
Time taken	9 mins 45 secs
Grade	11.67 out of 13.00 (90%)

Question 1

Incorrect

Mark 0.00 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: PRPOTYIIUQEU ×

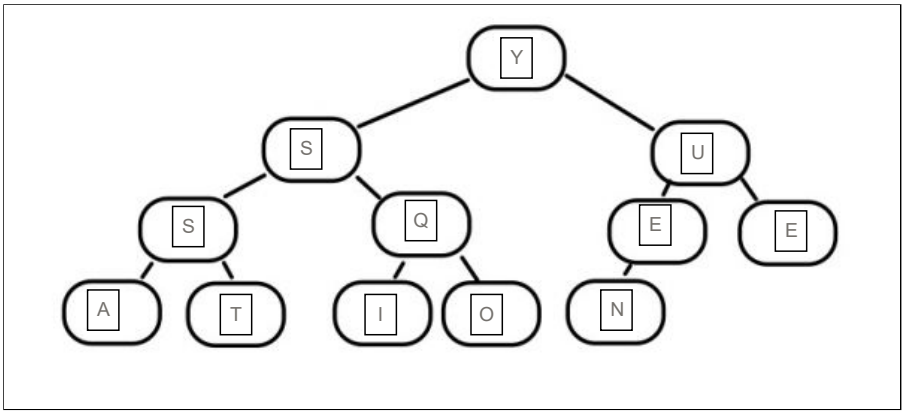
The correct answer is: RRPOTYIIUQEU

Question 2

Partially correct

Mark 0.67 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



E S

Your answer is partially correct.

You have correctly selected 8.

Question 3

Correct

Mark 1.00 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. Ordered array
- b. Unordered array ✓
- c. Heap

Your answer is correct.

The correct answer is: Unordered array

Question 4

Correct

Mark 1.00 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. Heap ✓
- b. Unordered array
- c. Ordered array ✓

Your answer is correct.

The correct answers are: Heap, Ordered array

Question 5

Correct

Mark 1.00 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 to the right
- c. The key will sink in the direction where a grand-child is larger
- d. The key will sink to the left ✓

Your answer is correct.

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

Question 6

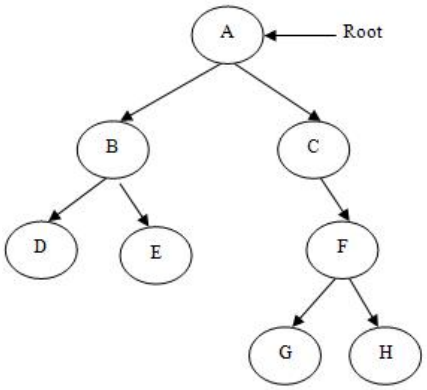
Correct

Mark 1.00 out of 1.00

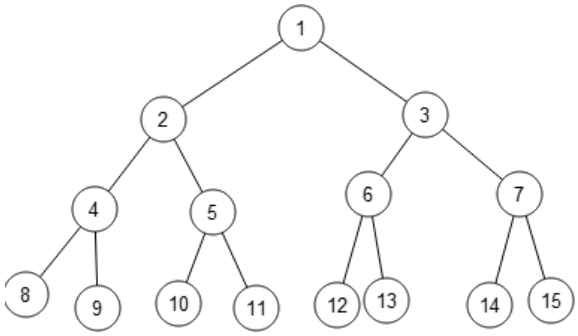
Select the complete tree(s)

Select one or more:

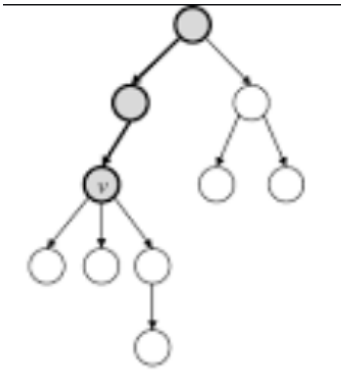
a.



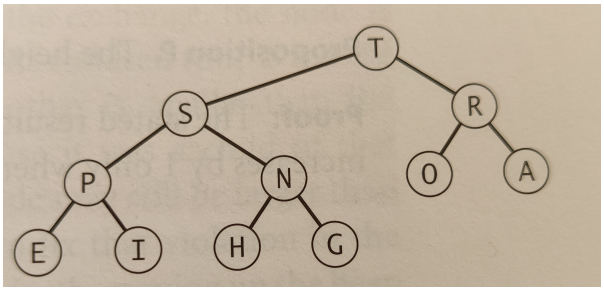
b. ✓



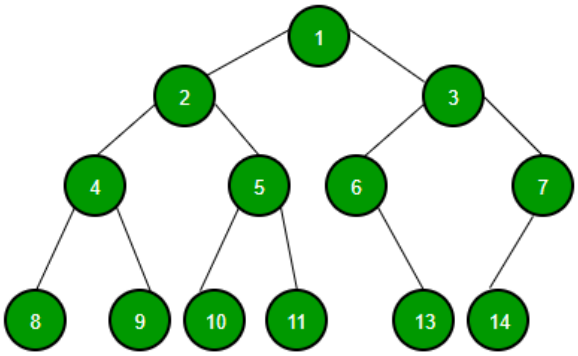
c.



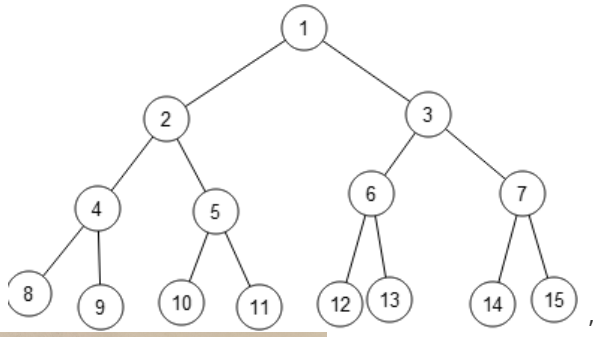
d. ✓



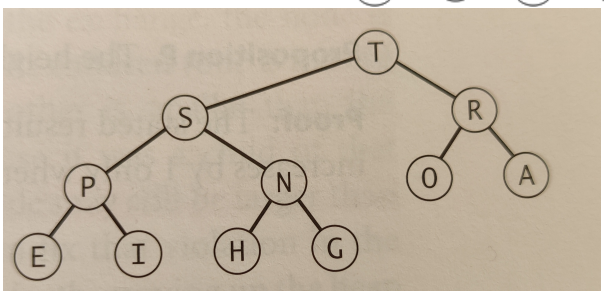
e.



Your answer is correct.

The correct answers are: 

,



Question 7

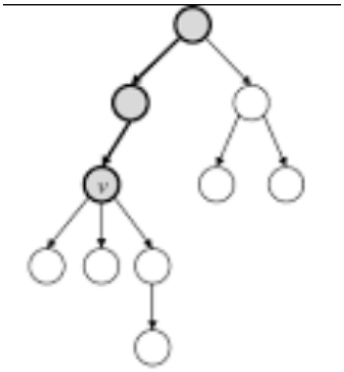
Correct

Mark 1.00 out of 1.00

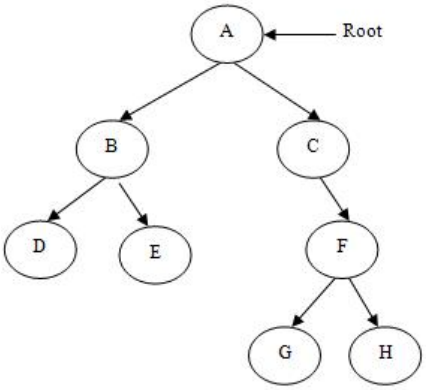
Select the binary tree(s)

Select one or more:

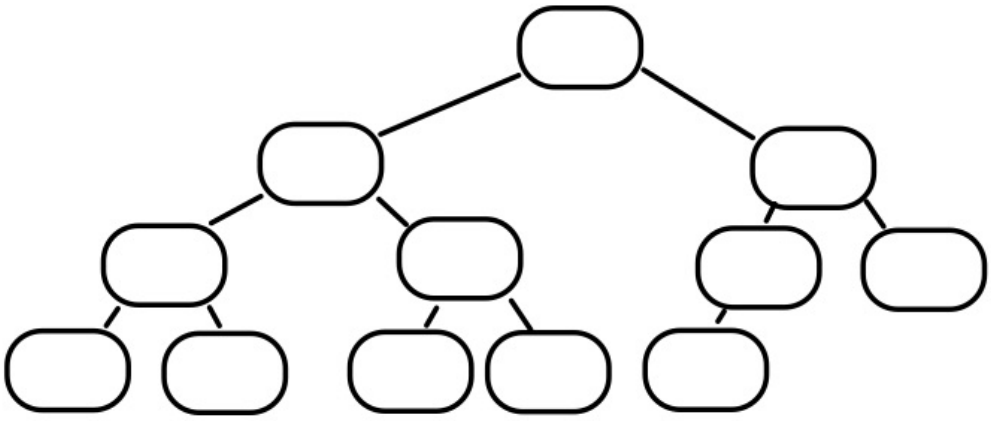
a.



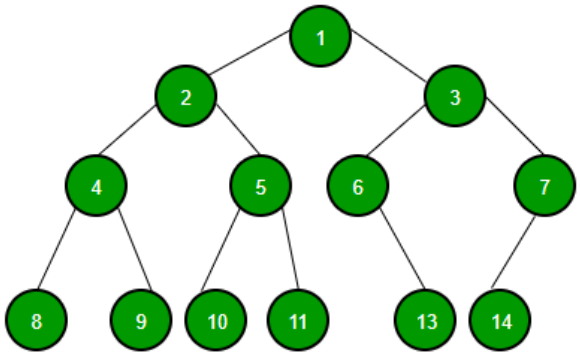
b. ✓



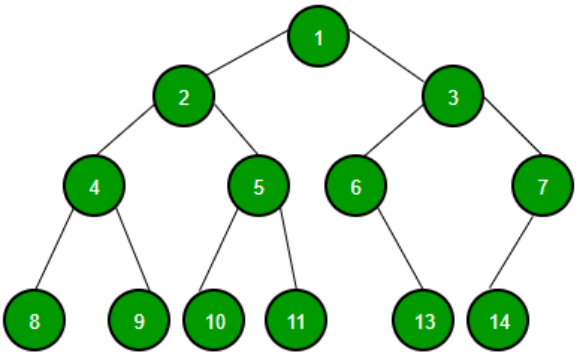
c. ✓



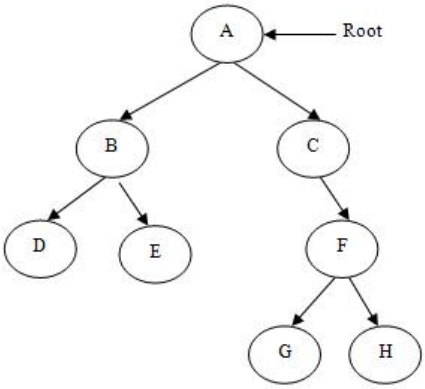
d.



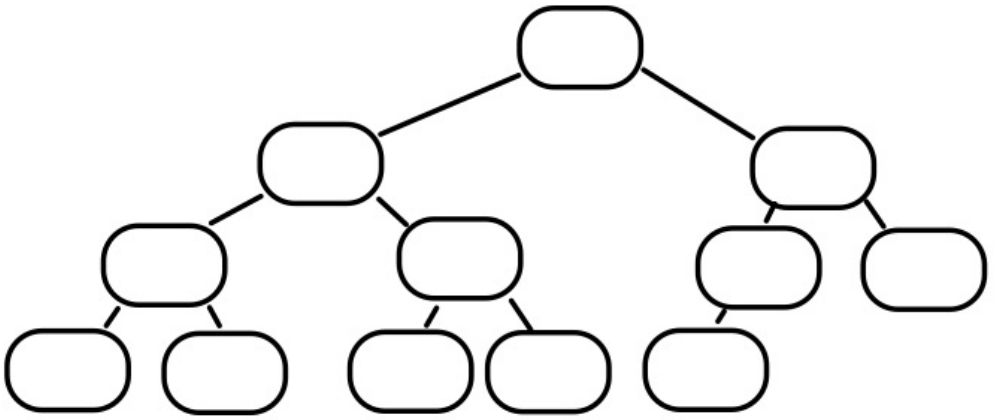
Your answer is correct.



The correct answers are: ,



,



Question 8

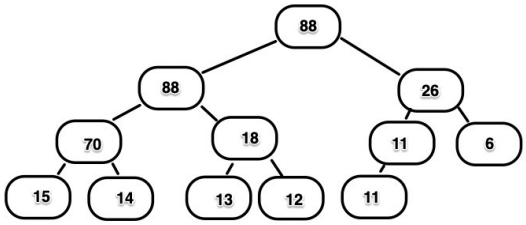
Correct

Mark 1.00 out of 1.00

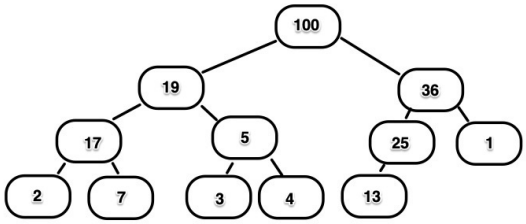
Select the heap-ordered tree(s)

Select one or more:

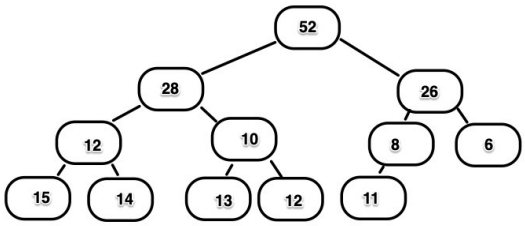
a.



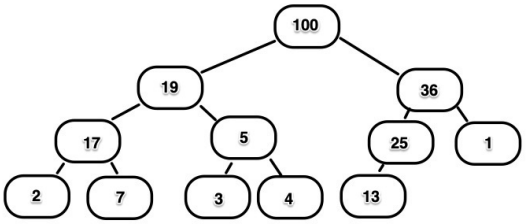
b.



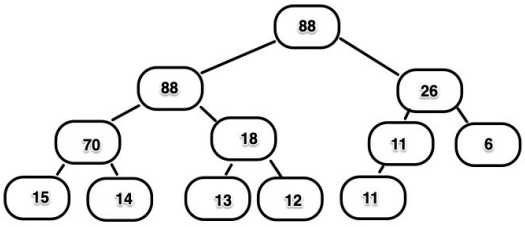
c.



Your answer is correct.



The correct answers are: ,



Question 9

Correct

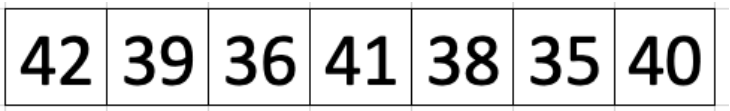
Mark 1.00 out of 1.00

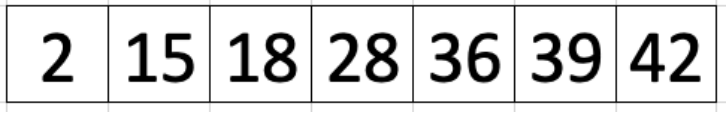
Select the max-heap-ordered array(s)

Select one or more:

- [x] a. 

✓
- [x] b. 

✓
- [ ] c. 

- [ ] d. 

Your answer is correct.

The correct answers are: 

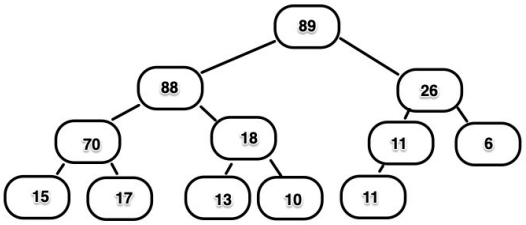
,


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.

89	88	70	15	17	18	13	10	26	11	11	6

c.

15	17	70	13	10	18	88	11	11	6	26	89

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

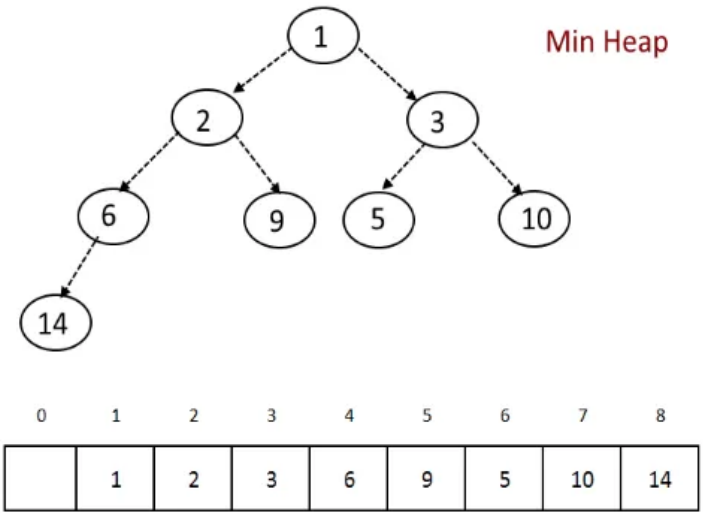
True or false:

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

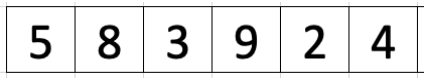
Correct

Mark 1.00 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 correct.

The correct answer is: 

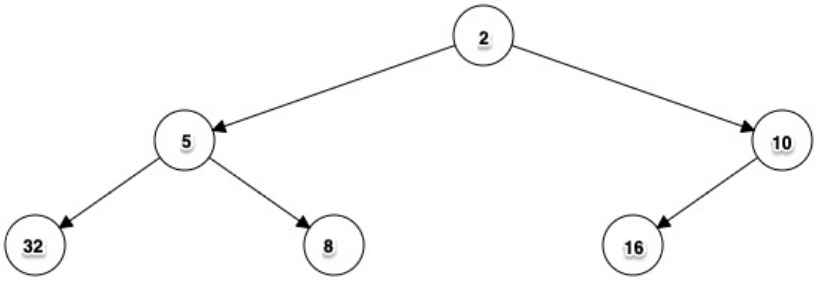
Question 13

Correct

Mark 1.00 out of 1.00

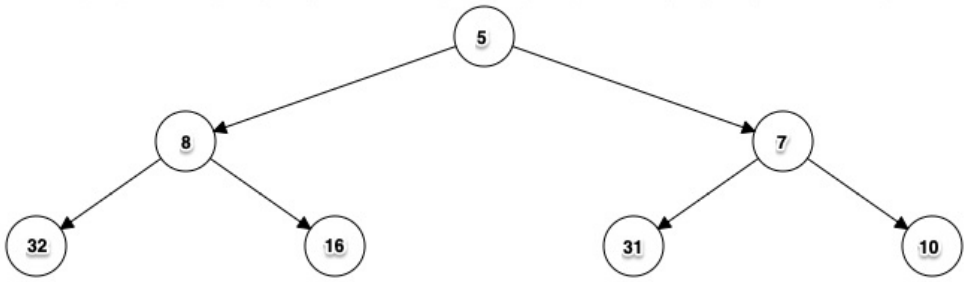
Considering the below min-heap. What does it look like after conducting the following operations:

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

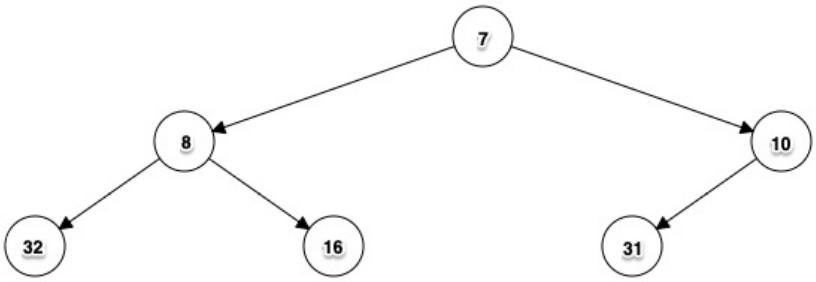


Select one:

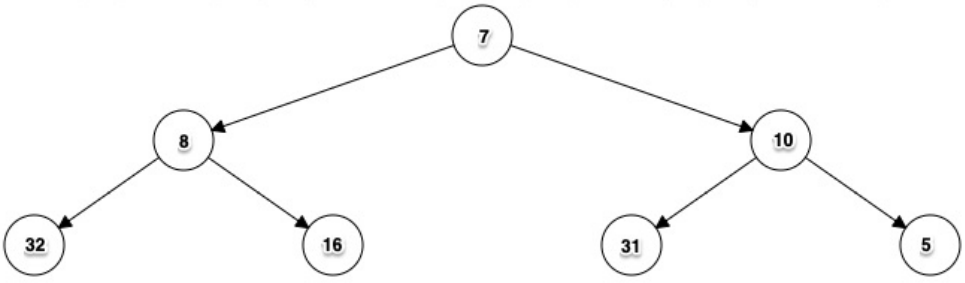
a. ✓



b.



c.



Your answer is correct.

The correct answer is: