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CSCI 2270 - Gupta, Trivedi, Zagrodzki - CS2: Data Structures

SECTIONS

1
2
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10
11
12
13
14

Started on	Monday, 4 March 2019, 4:18 PM
State	Finished
Completed on	Monday, 4 March 2019, 4:36 PM
Time taken	18 mins 2 secs
Grade	**10.00** out of 10.00 (**100%**)

Question 1

Correct

Mark 1.25 out of 1.25

Which of the following is true based on the below tree?

```
              7
            /   \
          5       9
         / \     / \
        3   6   8   15
       /
      100
```
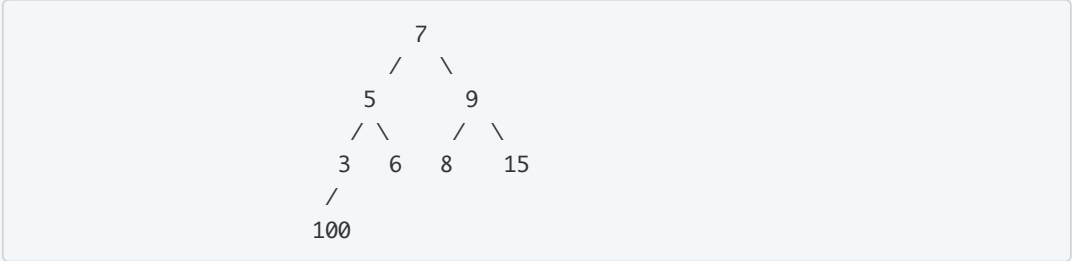
Select one:

- ○ a. node 6 is a parent
- ○ b. This is a binary search tree
- ◉ c. node 8 is a leaf ✔
- ○ d. the height of the tree is 2 because every node has 2 children
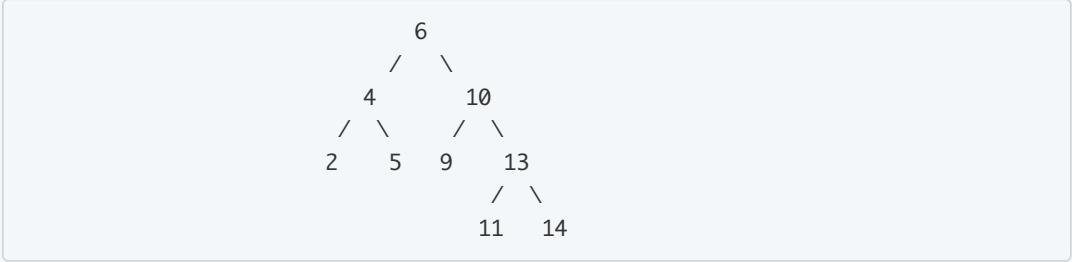
Your answer is correct.

Question 2

Correct

Mark 1.25 out of 1.25

Which of the following is true based on the below tree?

```
                6
              /   \
            4       10
           / \     / \
          2   5   9   13
                     / \
                    11   14
```

Select one:

- ○ a. the height of the tree is 4
- ○ b. this tree is a complete binary tree
- ○ c. node 9 is a parent
- ◉ d. node 5 is a leaf ✔

Your answer is correct.

Correct

Mark 1.25 out of 1.25

```
     K
   / | \
  M   R   T
  |   | \
  Q   Y   X
```
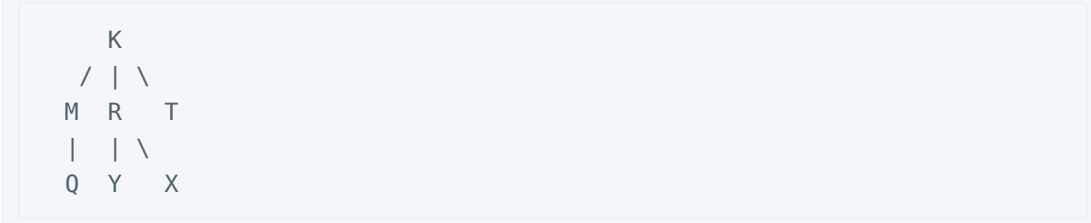
Select one or more:

- ☑ a. Y ✔
- ☐ b. M
- ☑ c. T ✔
- ☑ d. X ✔
- ☐ e. K
- ☑ f. Q ✔
- ☐ g. R

Your answer is correct.

Question **4**

Correct

Mark 1.25 out of 1.25

Given the function below, write the output (from cout) of this function.

```cpp
int myFunc(int n)
{
    int result = 0;
    if (n <= 0)
        return 0;
    if (n == 1)
        return 1;
    result = myFunc(n-1) + myFunc(n-3);
    return result;
}
int main( )
{
    cout << myFunc(4);
    return 0;
}
```

Answer: 2 ✔

Question **5**

Correct

Mark 1.25 out of 1.25

What is the inorder traversal output for this tree?
(use **spaces** to separate numbers in the answer)

```
              7
            /   \
           5     9
          / \   / \
         3  6  8   15
```

Answer: 3 5 6 7 8 9 15 ✔

Correct

Mark 1.25 out of 1.25

(use **spaces** to separate numbers in the answer)

```
                    7
                  /     \
                 5       9
               /  \     /  \
             12   6   8    1
                 / \      /
               10  2    3
```

Answer: `12 10 2 6 5 8 3 1 9 7` ✔

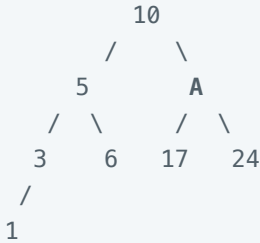
Question **7**

Correct

Mark 1.25 out of 1.25

The tree is a binary search tree. Which number should be put at A?
Select all that apply.

```
                10
               /    \
              5       A
            /  \     /  \
           3    6  17   24
          /
         1
```

Select one or more:

☐ a. 9

☑ b. 18
✔

☑ c. 22
✔

☐ d. 14

☐ e. 27

Your answer is correct.

Correct

Mark 1.25 out of 1.25

45. You **do not** need to include any node that is NULL. You must write your answer in the order that the nodes are visited.
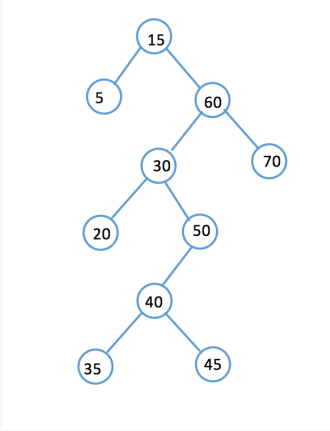
For example,

Order of nodes visited:

Node
15

means to evaluate the node with a value of 15 first.

Order of nodes visited:

Node
15

60 ✔

30 ✔

50 ✔

40 ✔

45 ✔

Your answer is correct.

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