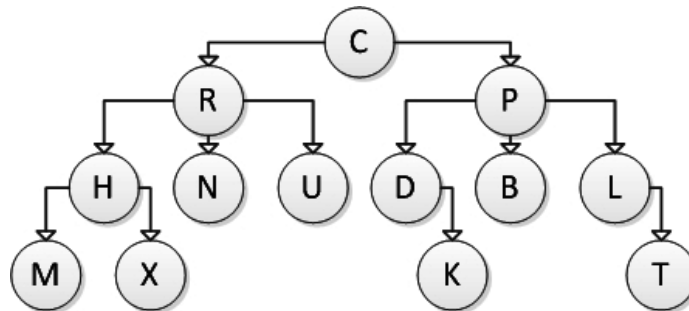


[Dashboard](#) / [My courses](#) / [CIS202-Tonning-SP23](#) / [29 May - 4 June](#) / [Study Questions for Tree Structures Quiz](#)**Started on** Thursday, 1 June 2023, 2:48 PM**State** Finished**Completed on** Thursday, 1 June 2023, 3:03 PM**Time taken** 15 mins 3 secs**Question 1**

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are root nodes?

Select one:

- ☐ a. R
- ☐ b. R and P
- ☒ c. C
- ☐ d. P

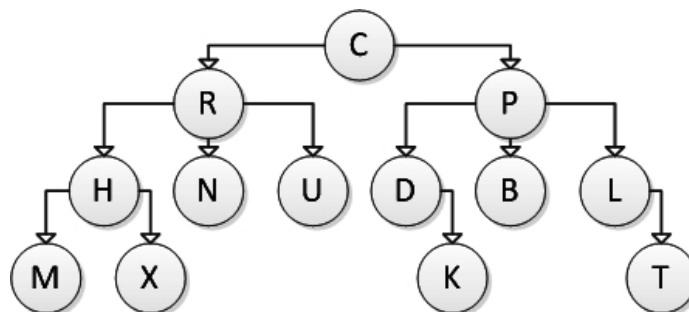
✓ Correct

Question 2

Incorrect

Mark 0.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are interior nodes?

Select one:

- ☐ a. B
- ☐ b. C and P
- ☐ c. C, N, and P
- ☐ d. H, K, and T

✗ Incorrect

u. IN

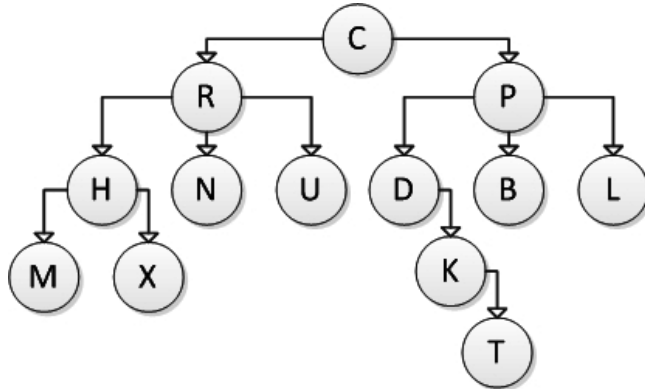
Incorrect

Question 3

Incorrect

Mark 0.00 out of 1.00

Consider the following tree diagram:



What is the size of the subtree with root R?

Select one:

- ☐ a. 6
- ☐ b. 4
- ☐ c. 3
- ☒ d. 2

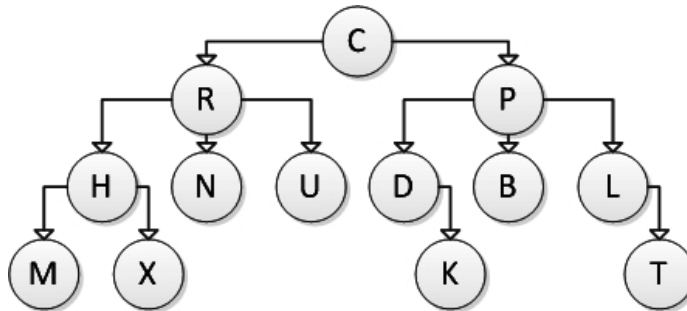
Incorrect

Question 4

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



What is the height of this tree?

Select one:

- ☐ a. 3
- ☐ b. 6
- ☐ c. 7
- ☒ d. 4

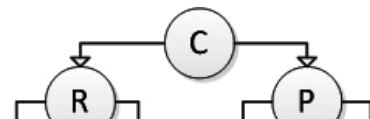
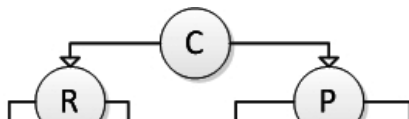
Correct

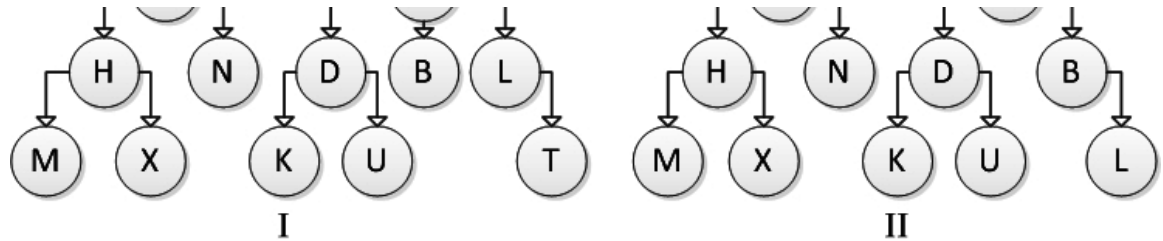
Question 5

Correct

Mark 1.00 out of 1.00

Consider the following tree diagrams:





Which of the above are binary trees?

Select one:

- ☒ a. II only
- ☐ b. Neither I nor II
- ☐ c. I only
- ☐ d. Both I and II

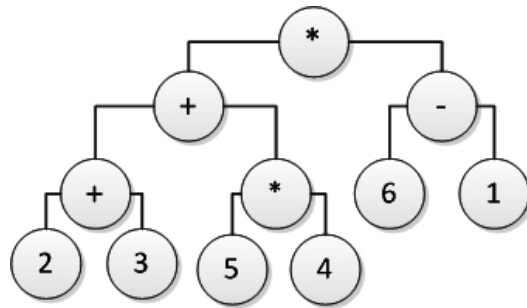
✓ Correct

Question 6

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which arithmetic expression is represented by this tree?

Select one:

- ☐ a. $2 + 3 + 5 * 4 - 6 - 1$
- ☒ b. $[(2 + 3) + (5 * 4)] * (6 - 1)$
- ☐ c. $(2 + 3) * (5 * 4) * (6 - 1)$
- ☐ d. $(2 + 3) + (5 * 4) * 6 * (-1)$

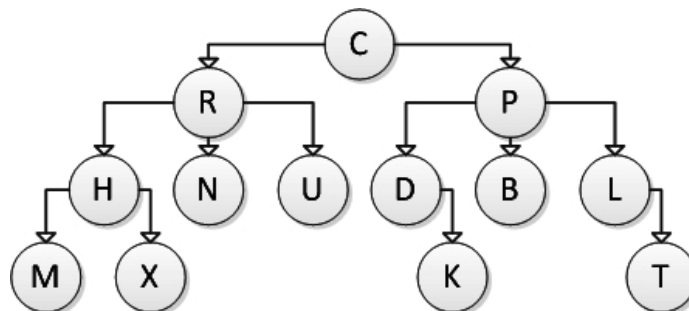
✓ Correct

Question 7

Incorrect

Mark 0.00 out of 1.00

Consider the following tree diagram:



Which of the following is a path in the tree?

Select one:

- ☐ a. K, D, P
- ☐ b. C, R, N, X
- ☒ c. T, L, P, C
- ☐ d. R, H, X

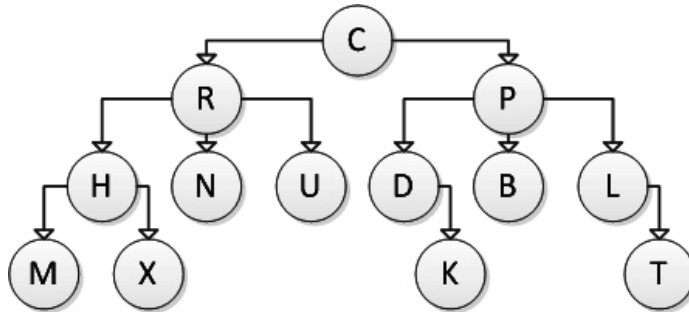
✗ Incorrect

Question 8

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are child nodes?

Select one:

- ☐ a. C
- ☐ b. C and P
- ☐ c. C and X
- ☒ d. P and X

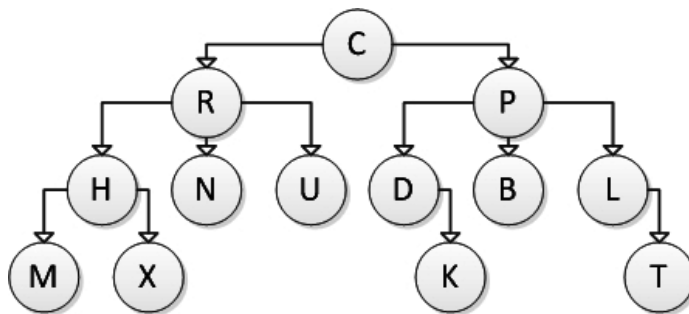
✓ Correct

Question 9

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following statements is NOT correct?

Select one:

- ☐ a. Nodes H, M, and X form a subtree
- ☐ b. Nodes L and T form a subtree
- ☐ c. Nodes D and K form a subtree
- ☒ d. Nodes R and N form a subtree

✓ Correct

Question 10

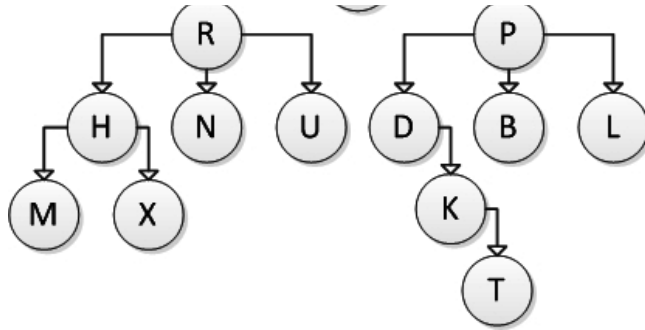
Correct

Mark 1.00 out

Consider the following tree diagram:



of 1.00



What is the size of this tree?

Select one:

- ☐ a. 5
- ☐ b. 4
- ☐ c. 6
- ☒ d. 13

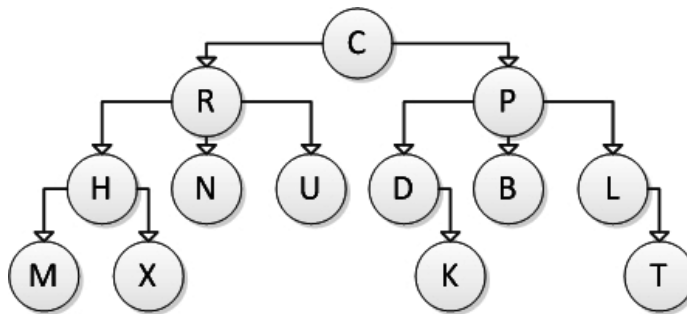
✓ Correct

Question 11

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are leaf nodes?

Select one:

- ☒ a. B
- ☐ b. C
- ☐ c. B and H
- ☐ d. H

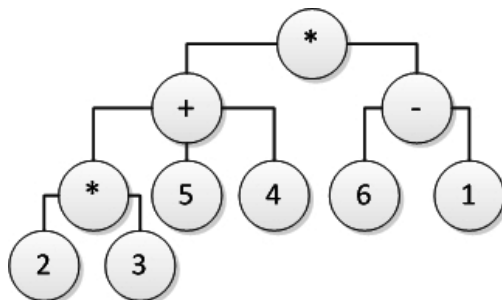
✓ Correct

Question 12

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which arithmetic expression is represented by this tree?

Select one:

- ☐ a. $2 * 3 + 5 + 4 * 6 - 1$
- ☐ b. $2 * (3 + 5 + 4) * (6 - 1)$
- ☒ c. $[(2 * 3) + 5 + 4] * (6 - 1)$
- ☐ d. $2 * 3 + 5 + 4 - 6 - 1$

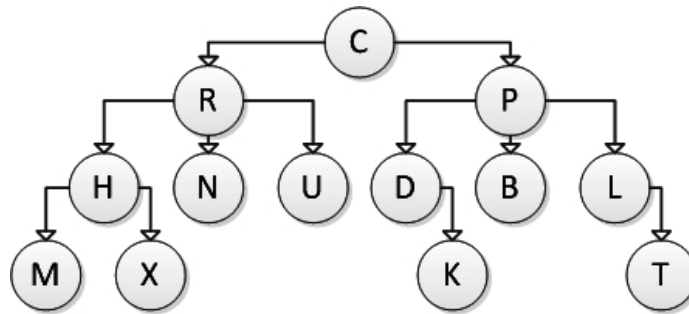
✓ Correct

Question 13

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are siblings?

Select one:

- ☒ a. D and B
- ☐ b. D and U
- ☐ c. H and M
- ☐ d. L and T

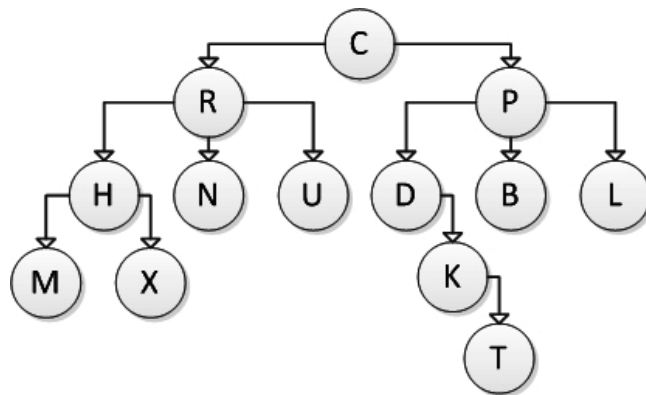
✓ Correct

Question 14

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



What is the height of the subtree with root R?

Select one:

- ☒ a. 3
- ☐ b. 6
- ☐ c. 2
- ☐ d. 4

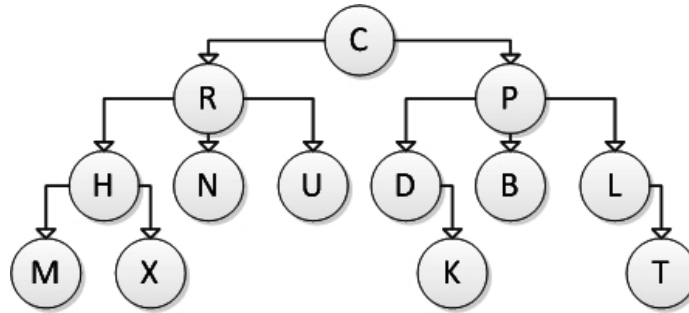
✓ Correct

Question 15

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following statements is NOT correct?

Select one:

- ☐ a. H is an ancestor of M
- ☒ b. D is an ancestor of P
- ☐ c. R is an ancestor of N
- ☐ d. C is an ancestor of N

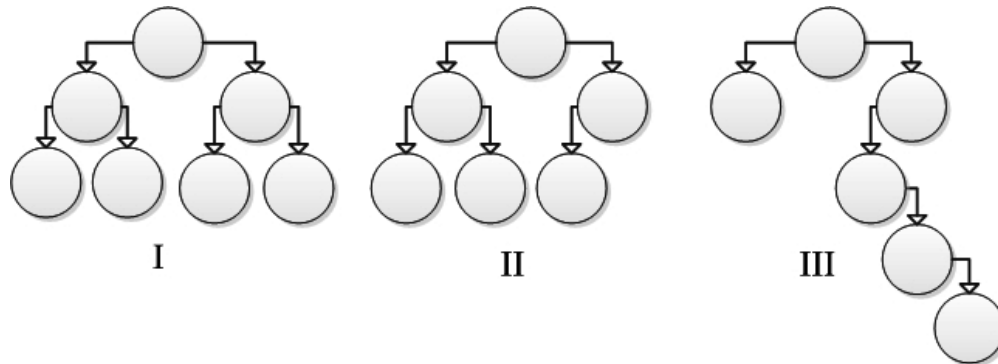
✓ Correct

Question 16

Correct

Mark 1.00 out of 1.00

Consider the following tree diagrams:



Which of these trees is considered to be balanced?

Select one:

- ☒ a. I and II only
- ☐ b. I only
- ☐ c. II and III only
- ☐ d. I and III only

✓ Correct

Question 17

Correct

Mark 1.00 out of 1.00

Consider a balanced binary tree with 520 nodes. The average length of all paths from the root to the leaves is approximately ____.

Select one:

- ☐ a. 13
- ☒ b. 9
- ☐ c. 12

✓ Correct

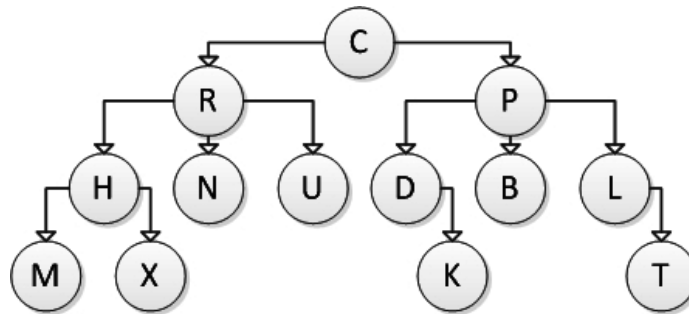
☐ d. 10

Question 18

Correct

Mark 1.00 out of 1.00

Consider the following tree diagram:



Which of the following nodes are parent nodes?

Select one:

- ☒ a. R
- ☐ b. N
- ☐ c. M
- ☐ d. B

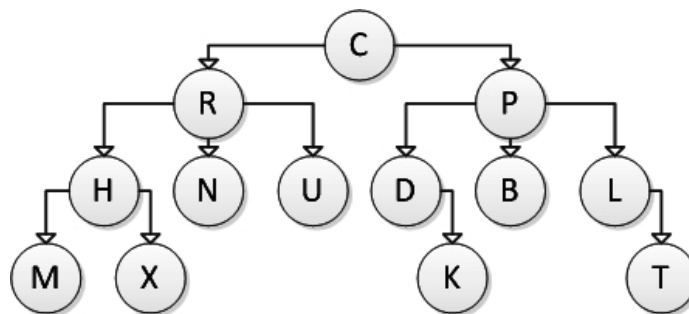
✓ Correct

Question 19

Incorrect

Mark 0.00 out of 1.00

Consider the following tree diagram:



Which of the following is NOT a path starting with the node P in the tree?

Select one:

- ☐ a. P, B
- ☐ b. P, K, D
- ☒ c. P
- ☐ d. P, L, T

✗ Incorrect

Question 20

Correct

Mark 1.00 out of 1.00

A balanced binary search tree

Select one:

- ☐ a. always has the same number of nodes
- ☒ b. has approximately as many descendants on the right as on the left for each subtree
- ☐ c. takes $O(1)$ time for insertion

✓ Correct

- ☐ c. takes $O(1)$ time for insertion
- ☐ d. must move each node down by one slot to accommodate a newly inserted node

[◀ Recursive Tree Print](#)[Tree Structures Quiz ▶](#)