Started on	Tuesday, 12 March 2024, 10:28 AM
State	Finished
Completed on	Tuesday, 12 March 2024, 10:35 AM
Time taken	6 mins 51 secs
Grade	**13.00** out of 16.00 (**81**%)

Question **1**

Incorrect

Mark 0.00 out of 1.00

One of the important properties of (2, 4) tree is _____

- a. Every internal node has at least four children..
- b. All of these ✖
- c. Every internal node has at most four children.
- d. None of these
- e. Every internal node has at most two children.

Your answer is incorrect.

The correct answer is:
Every internal node has at most four children.

Question **2**

Correct

Mark 1.00 out of 1.00

Breadth First Search is equivalent to which of the traversal in the Binary Trees?

- a. Post-order Traversal
- b. Level-order Traversal ✔
- c. Pre-order Traversal
- d. In-order Traversal

Your answer is correct.

The correct answer is:
Level-order Traversal

Question **3**

Correct

Mark 1.00 out of 1.00

The Data structure used in standard implementation of Breadth First Search is?

- a. Queue ✔
- b. Tree
- c. Stack
- d. Linked List

Your answer is correct.

The correct answer is:
Queue

Question **4**

Correct

Mark 1.00 out of 1.00

Which of the following is not an application of Breadth First Search?

- a. Finding shortest path between two nodes
- b. Path Finding ✔
- c. GPS navigation system
- d. Finding bipartiteness of a graph

Your answer is correct.

The correct answer is:
Path Finding

Question **5**

Incorrect

Mark 0.00 out of 1.00

In BFS, how many times a node is visited?

- a. Once ✖
- b. Equivalent to the total number of nodes
- c. Twice
- d. Equivalent to number of indegree of the node

Your answer is incorrect.

The correct answer is:
Equivalent to number of indegree of the node

Question **6**

Correct

Mark 1.00 out of 1.00

Which of the following insertion sequence (into an empty BST) will make the tree totally skewed binary search tree?

- a. 5,22,23,24,27 ✔
- b. 1,6,7,8,9,10,11,21,13
- c. 99,89,88,77,87
- d. 1,5,3,8,12,18

Your answer is correct.

The correct answer is:
5,22,23,24,27

Question **7**

Correct

Mark 1.00 out of 1.00

_____ tree has fixed height.

- a. AVL
- b. 2-3-4 ✔
- c. BST
- d. Red-Black

Your answer is correct.

The correct answer is:
2-3-4

Question **8**

Correct

Mark 1.00 out of 1.00

What is the worst case time complexity of inserting n^2 elements into an AVL tree?

- a. None of these
- b. *logn*
- c. n
- d. n^2
- e. $n^2 logn$ ✔

Your answer is correct.

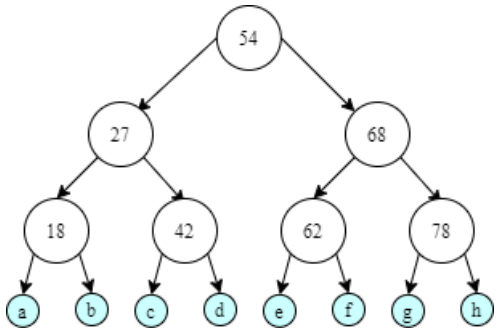
The correct answer is:
$n^2 logn$

Question **9**

Correct

Mark 1.00 out of 1.00

1. A node having value of 64 is inserted into AVL tree given below. Considering *a-to-h* as the leaf nodes, which is the best position for the insertion of new node.



- a. Left child of Node having value of 62 ✔
- b. Left child of node having value of 78
- c. Right child of node having value of 42
- d. Left child or right child of node having value of 62

Your answer is correct.

The correct answer is:
Left child of Node having value of 62

Question **10**

Correct

Mark 1.00 out of 1.00

The following statements are made for a red black tree.

I. The root is black.

II. Every external node is black.

III. The children of a red node are black.

- a. II, and III are true but I is false.
- b. All are true ✔
- c. Only II and III are true
- d. All are false
- e. Only I is true

Your answer is correct.

The correct answer is:
All are true

Question **11**

Incorrect

Mark 0.00 out of 1.00

A binary search tree is constructed by inserting the following elements in given order: 56, 16, 60, 7, 22, 42, 98, 4, 8, 39, 61, 28,110 The number of nodes in the left subtree and right subtree of the root node respectively is:

Select one:

- 8, 3
- 7, 4
- 4, 7 ✖ Incorrect
- 8, 4

Incorrect

The correct answer is: 8, 4

Question **12**

Correct

Mark 1.00 out of 1.00

A binary search tree is traversed in the following order recursively: Right, Root, Left .The output sequence will be in

Select one:

- 1. Ascending order
- 2. Bitonic sequence
- 3. No specific order
- 4. Descending order ✔ Correct

Correct

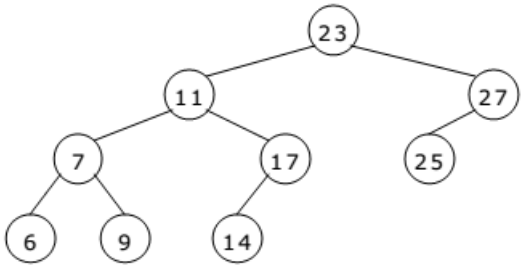
The correct answer is: Descending order

Question **13**

Correct

Mark 1.00 out of 1.00

For the binary search tree shown in figure, after deleting node 23 from the tree which parent → child pair does not occur in the tree?



Select one:

- 1. 27 → 11 ✔ Correct
- 2. 25 → 11
- 3. 25 → 27
- 4. 7 → 9

Correct

The correct answer is: 27 → 11

Question **14**

Correct

Mark 1.00 out of 1.00

Postorder traversal of a given binary search tree, T produces the following sequence of keys 9, 8, 23, 22, 27, 25, 15, 50, 120, 59, 40, 29 Which one of the following sequences of keys can be the result of an in-order traversal of the tree T?

Select one:

- 1. 8, 9, 15, 22, 40, 50, 59, 120, 23, 25, 27, 29
- 2. 120, 59, 50, 40, 29, 27, 25, 23, 22, 15, 9, 8
- 3. 29, 15, 8, 9, 25, 22, 23, 27, 40, 59, 50, 120
- 4. 8, 9, 15, 22, 23, 25, 27, 29, 40, 50, 59, 120 ✔ Correct

Correct

The correct answer is: 8, 9, 15, 22, 23, 25, 27, 29, 40, 50, 59, 120

Question **15**

Correct

Mark 1.00 out of 1.00

Suppose a binary search tree constructed using numbers between 100 and 950 and we are searching for 362. Which of the following sequence could not be sequence of nodes searched?

Select one:

- 1. 923, 220, 911, 244, 898, 258, 362, 362
- 2. 100, 251, 400, 398, 330, 344, 350, 362
- 3. 100, 399, 387, 219, 266, 382, 381, 278, 362
- 4. 924, 202, 911, 240, 950, 245, 362 ✔ Correct

Correct

The correct answer is: 924, 202, 911, 240, 950, 245, 362

Question **16**

Correct

Mark 1.00 out of 1.00

The Inorder and Preorder traversals of a binary tree are G,C,F,A,E,B,D and A,C,G,F,B,E,D respectively, then the Postorder traversal of that binary tree is:

Select one:

- 1. E,D,B,G,F,C,A
- 2. G,F,C,E,D,B,A ✔ Correct
- 3. E,D,B,F,G,C,A
- 4. D,E,F,G,B,C,A

Correct

The correct answer is: G,F,C,E,D,B,A