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National University of Computer & Emerging Sciences

FAST-Karachi Campus

CS201- Data Structures (Fall 2018)

Grand Quiz # 4

Dated: December 06, 2018 Marks: 40

Time: 25 Min.

Std No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Checker No. \_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Q1** | A | B | C | D | **Q11** | A | B | C | D |
| **Q2** | A | B | C | D | **Q12** | A | B | C | D |
| **Q3** | A | B | C | D | **Q13** | A | B | C | D |
| **Q4** | A | B | C | D | **Q14** | A | B | C | D |
| **Q5** | A | B | C | D | **Q15** | A | B | C | D |
| **Q6** | A | B | C | D | **Q16** | A | B | C | D |
| **Q7** | A | B | C | D | **Q17** | A | B | C | D |
| **Q8** | A | B | C | D | **Q18** | A | B | C | D |
| **Q9** | A | B | C | D | **Q19** | A | B | C | D |
| **Q10** | A | B | C | D | **Q20** | A | B | C | D |

Q1. Time complexity of Binary search is

1. O(n)
2. O(log n)
3. O(n log n)
4. O(n2 )

Q2. Which of the following data structure is non-linear type?

1. Array
2. Linked List
3. Trees
4. Pair

Q3. Time complexity of Binary Search Tree for searching a node is

1. O(n)
2. O (log n)
3. O(h)
4. O (n log n)

Q4. The worst case time complexity of AVL tree is better in comparison to binary search tree for

1. [Search and Insert Operations](javascript:void%200)
2. [Search and Delete Operations](javascript:void%200)
3. Insert and Delete Operations
4. Search, Insert and Delete Operations

Q5. In AVL Tree Right-Rotation is need when one of the condition is true for the tree

1. Left Skew Tree
2. Left-Right Skew Tree
3. Right Skew
4. Balance

Q6. In AVL Tree the height of the tree is related to the height of a balance tree with same data

1. Same height
2. Less height
3. More height
4. No-relation

Q7. How many times a traversal on tree, visit each node of a tree?

1. 1
2. 2
3. N
4. 0

Q8. In a BST how many nodes have null parent pointer?

1. 1
2. 2
3. N
4. 0

Q9. A BST is traversed in the following order recursively: Right, root, left. The output sequence will be in

1. Ascending order
2. Descending order
3. Bitomic order
4. No specific order

Q10. What is the largest depth of a BST with N Nodes?

1. Log N
2. 2\*N
3. N-1
4. N

Q11. How many pairs of, binary trees can be formed from 4 nodes, if we count mirror and original trees possible, as one pair.?

1. 3
2. 14
3. 7
4. 9

Q12. What is the size of an AVL tree with N nodes?

1. N-1
2. N
3. N2
4. Log N

Q13. Which is not an issue for DSW Algorithm?

1. Extra Array
2. Rotation
3. Update Time
4. Modification Time

Q14. A traversal that performed, visit to all decedents nodes of a given node before the accessing any same level node is termed as:

1. Depth-First Traversal
2. Breadth-First Traversal
3. Diameter Traversal
4. Height-Traversal

Q15. In Hashing, which is not a collision resolution technique?

1. Linear probe
2. Separate chaining
3. Merging
4. Double hashing

Q16. What can be a drawback for using hashing?

1. Simplistic Hash-function
2. Collision resolution strategies
3. Space
4. Non-unique keys

Q17. What is the space complexity of a Binary Search?

1. O(1)
2. O(n)
3. O( log n)
4. O( n log n)

Q18. In a binary tree certain null entries are replaced by special pointers which point to nodes higher in tree for efficiency. These special pointers are called

1. Leaf
2. Branch
3. Path
4. Thread

Q19. Which of the following statements concerning heaps is not true?

1. A heap can be stored in a binary search tree.
2. A heap can be stored in an array.
3. A heap can be used to implement a priority queue.
4. A heap can be used to sort data

Q20. What is true about jump search?

1. Data should be sorted
2. It searches fewer elements than linear search.
3. It searches fewer elements than binary search.
4. A and B