



CS301

FINAL TERM

VU SPARKY



Version (1.1)

VU LMS HANDLING ✓

LMS SERVICES

ONLINE ASSIGNMENTS ✓

ONLINE QUIZ'S ✓

PROJECTS HANDLING ✓

LECTURES ATTENDANCE ✓

INTERNSHIP REPORTS ✓

VU SPARKY ✓

QUALITY

CONTACT US: +923147094561



FOR PAID SOLUTIONS CONTACT 03147094561



Click Join Now & Subscribe Button



SUBSCRIBE

WHATSAPP GROUP 1

Join NOW

WHATSAPP GROUP 2

Join NOW

WHATSAPP GROUP 3

Join NOW

Join WHATSAPP CHANNEL

JOIN NOW

@studywithhamza25

UPDATE

PAID SOLUTIONS CONTACT 03147094561

فائل کو پڑھنے سے پہلے اپڈیٹ والے
لفظ پر کلک کر کے اپڈیٹ کر لے کچھ نئے
سوالات اپڈیٹ کیے جاتے ہیں۔

JOIN GROUP

<https://chat.whatsapp.com/lpD5cfNalJXluIMF5mHQc6>

FOR PAID SOLUTIONS CONTACT 03147094561

JOIN GROUP#3

<https://chat.whatsapp.com/lpD5cfNaJXlu1MF5mHQc6>

1. Consider a complete binary tree, represented by the following array (array index starts at 1):

19, 7, 15, 6, 4, 13, 2, 3, 2

What will be values of the children of the node with value '15'?

Left:_____ Right:_____

a. 13,2

b. 19,7

c. 4,13 ✓ SPARKY

d. 6,4

2. If we want to find median of 50 elements, then after applying buildHeap method, how many times deleteMin method will be called ?

a. 35

b. 5 ✓ SPARKY @studywithhamza25

c. 50

d. 25

3. In a perfect binary tree of height h, the total number of nodes N is _____.

a. $2^{h-1} - 1$

b. $2^{h+1} + 1$

c. $2^{h-1} + 1$

d. $2h+1 - 1$ ✓ SPARKY

FOR PAID SOLUTIONS CONTACT 03147094561

4. Which of the following statement concerning heaps is NOT true?

- a. A heap can be used to sort data.
- b. A heap can be used to implement a priority queue.
- c. A heap can be stored in a binary search tree.

✓ SPARKY

d. A heap can be stored in an array.

5. In heap data structure, the time required for buildHeap() method will be proportional to

a. N ✓ SPARKY

b. N^2

c. $N \log_2 N$

d. $\log_2 n$

6. Consider a min heap, represented by the following array:

3,4,6,7,5,10

@studywithhamza25

After inserting a node with value 1. Which of the following is the updated min heap?

a. 1,4,6,7,5,10,3

b. 3,4,6,7,5,1,10

c. 3,4,6,7,5,10,1

d. 1,4,3,7,5,10,6 ✓ SPARKY

FOR PAID SOLUTIONS CONTACT 03147094561

7. If whole data is given to construct the min heap, then which of the following is true?

- a. Both Insert and Buildheap methods are inappropriate.
- b. Both Insert and BuildHeap method are equally appropriate
- c. Insert method is appropriate for construction
- d. BuildHeap method is appropriate for construction** ✓*SPARKY*

8. Which of the following statement is not correct about Binary Trees, where binary tree traversals are carried out repeatedly?

- a. The overhead of stack operations during recursive calls can be costly.
- b. It is very cumbersome to modify the tree data structure as most of pointer fields are not NULL.
- c. If we use non-recursive but stack driven traversal procedure then it would be costly again.** ✓*SPARKY*
- d. It is useful to modify the tree data structure which represents the binary tree to speed up the inorder traversal process by making it stack free.

9. Which of the following statement is correct?

- a. A Threaded Binary Tree is a binary tree in which every node that does not have a right child has**

FOR PAID SOLUTIONS CONTACT 03147094561

a THREAD (in actual sense, a link) to its INORDER successor. ✓*SPARKY*

b. A Threaded Binary Tree is a binary tree in which every node that does not have a left child has a THREAD (in actual sense, a link) to its INORDER successor.

c. A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its PREORDER successor.

d. A Threaded Binary Tree is a binary tree in which every node that does not have a right child has a THREAD (in actual sense, a link) to its POSTORDER successor.

10. Heap can be used to implement

a. Stack

b. Priority Queue ✓*SPARKY*

c. Linked list

d. Queue

FOR PAID SOLUTIONS CONTACT 03147094561

JOIN GROUP#3

<https://chat.whatsapp.com/IpD5cfNaJXluMF5mHQc6>

1. A BST generated from the data in ascending order is _____.
 - a. Balanced
 - b. Linear** ✓ *SPARKY*
 - c. Nonlinear
 - d. Un sorted
2. In an expression tree, if symbol is an operand add it on a _____.
 - a. Heap
 - b. Linked list
 - c. Stack** ✓ *SPARKY*
 - d. Queue
3. The balance of a node in a binary tree is defined as the height of its _____ sub tree minus height of its right sub tree.
 - a. upper
 - b. right
 - c. left** ✓ *SPARKY*
 - d. lower
4. In Left-Right case of rotation in _____ tree. A double rotation is performed.
 - a. ALV
 - b. Binary Search
 - c. Big
 - d. AVL** ✓ *SPARKY*
5. In AVL tree during insertion, a single rotation can fix the balance in cases _____ and 4.
 - a. 5
 - b. 3

FOR PAID SOLUTIONS CONTACT 03147094561

c. 2

d. 1 ✓ SPARKY

6. If the root of a tree is at level zero, its two children (subtrees) i.e. nodes will be at _____

a. Level 1 ✓ SPARKY

b. Level 3

c. Level 0

d. Level 2

7. A tree is an AVL tree if

a. Root node fulfills the AVL condition

b. At least half of the nodes fulfill the AVL condition

c. Any one node fulfills the AVL condition

d. All the nodes fulfill the AVL condition ✓ SPARKY

8. A node in AVL tree can become imbalanced due to,

a. both insertion and deletion operations ✓ SPARKY

b. insertion operation

c. node does not imbalance due to insertion and deletion

d. deletion operation

9. _____ is the maximum height of the AVL tree.

a. $4.44\log_2 n$ @studywithhamza25

b. $1.44\log_2 n$ ✓ SPARKY

c. $\log_2 n$

d. 1.44

10. The _____ tree has been named after two persons.

a. AVL ✓ SPARKY

b. Binary

c. Red Black

d. Binary Search

FOR PAID SOLUTIONS CONTACT 03147094561

1. Convert the given infix form: $12 + 60 - 23$ of expression in postfix form.
 - a. $12\ 60\ +\ -23$
 - b. $12+\ 60\ 23\ -$
 - c. $+12\ 60\ -\ 23$
 - d. $12\ 60\ +\ 23\ -$ ✓^{HB}

2. Each operator in a postfix expression refers to the previous _____ operand(s).
 - a. two ✓^{HB}
 - b. four
 - c. three
 - d. one

3. Which of the following is known as "Last-In, First-Out" or LIFO Data Structure?
 - a. Stack ✓^{HB}
 - b. Queue
 - c. Tree
 - d. Linked List

FOR PAID SOLUTIONS CONTACT 03147094561

4. Which operation of queue data structure is used to insert an element into the Queue?

- a. **enqueue()** ✓^{HB}
- b. dequeue()
- c. remove()
- d. front()

5. Suppose a Stack class has been defined using template. Now, we want to declare a Stack object of an int type. What will be the correct syntax?

- a. **Stack<int> stack;** ✓^{HB}
- b. Stack int stack;
- c. int Stack stack ;
- d. <int>Stack stack ;

6. The usage of the class of a data structure causes the code of the program

- a. **Simplifies** ✓^{HB}
- b. Difficult
- c. Lengthy
- d. Complicated

FOR PAID SOLUTIONS CONTACT 03147094561

7. A stack carries _____ behavior.
- a. FEFO
 - b. AVCO
 - c. **LIFO** ✓^{HB}
 - d. FIFO
8. Linked List use _____ to store data.
- a. Array
 - b. Variables
 - c. 2-D Array
 - d. **Linked Memory** ✓^{HB}
9. In which data structure elements are inserted at the back and removed from the front?
- a. Tree
 - b. Stack
 - c. Linked List
 - d. **Queue** ✓^{HB}
10. In the calling function, after the execution of the function called, the program continues its execution from the _____ after the function call.

FOR PAID SOLUTIONS CONTACT 03147094561

- a. Next line ✓^{HB}
 - b. Beginning
 - c. End
 - d. Previous line
11. `int * i = new int [10];`
12. Above given code will:
- a. Allocate memory for 9 integers
 - b. Create 10 pointers of integer type
 - c. Allocate memory for 10 integers ✓^{HB}
 - d. Create an integer having value 10
13. The first step to add a node in a linked list between the existing nodes is
- a. `currentNode->getNext();`
 - b. `newNode->getNext();`
 - c. `newNode->setNext();`
 - d. `newNode->setNext(currentNode->getNext());` ✓^{HB}
14. To create a _____ we link the last node with the first node in the list.
- a. Double linked list
 - b. Linked list

FOR PAID SOLUTIONS CONTACT 03147094561

- c. **Circularly-linked list** ✓^{HB}
 - d. List
15. "--" is a _____ operator.
- a. **Unary** ✓^{HB}
 - b. Logical
 - c. Technical
 - d. Binary
16. In singly linked list "next" field of node contains:
- a. Object of next node
 - b. **Address of next node** ✓^{HB}
 - c. Address of head node
 - d. Object of current node
17. Stack.push(15) will push 15 on _____.
- a. Anywhere in the Stack
 - b. **Top of the Stack** ✓^{HB}
 - c. Middle of the Stack
 - d. Bottom of Stack
18. Which one option is associated with the data structures?
- a. Class

FOR PAID SOLUTIONS CONTACT 03147094561

- b. Time to perform each basic operation ✓^{HB}
 - c. Function
 - d. Quality
19. Which of the following line of code is incorrect?

- a. float *i = float new; ✓^{HB}
 - b. float *i = new float;
 - c. float i = 60;
 - d. float *i = new float[3];
20. Josephus problem is resolved by the implementation of _____.

- a. Stack
- b. Queue
- c. List
- d. Circular linked list ✓^{HB}

PAID SOLUTIONS CONTACT 03147094561

HB

THANKS FOR WATCHING!

FOR PAID SOLUTIONS CONTACT 03147094561

1. In the perspective of memory organization every process executing, the second part of the memory is for _____ of the program.

- a. Stack
- b. Heap
- c. **Code** ✓^{HB}
- d. Static Data

2. We can use Binary Search Tree with _____

- a. Non-integer data only
- b. Integer data only
- c. **Both Integer and String data** ✓^{HB}
- d. String data only

3. The function calls are made with the help of _____.

- a. Heap
- b. External memory
- c. **Stack** ✓^{HB}
- d. Dynamic memory

4. In which of the following tree for each node, the value of root node is greater than left child and smaller than right child ?

- a. Full Binary Tree
- b. Perfect Binary Tree
- c. Complete Binary Tree
- d. **Binary Search Tree** ✓^{HB}

5. Which of the following is correct syntax to pass a constant variable by reference to a function?

- a. `int display(int const val)`
- b. `int display(const int val)`
- c. `int display(const &int val)`
- d. **`int display(const int& val)`** ✓^{HB}

6. Analyze the given code carefully and identify which type of binary tree traversal this is :

```
void traversal (TreeNode<int>* treeNode)
{
```

FOR PAID SOLUTIONS CONTACT 03147094561

```

if( treeNode != NULL )
{
traversal (treeNode->getLeft());

cout << *(treeNode->getInfo())<<" ";

traversal (treeNode->getRight());

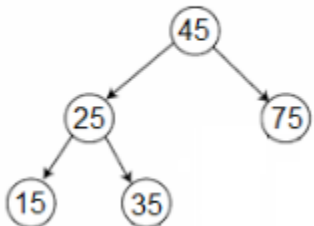
}
}

```

- a. Levelorder
- b. Preorder
- c. Inorder ✓^{HB}
- d. Postorder

7. What will be the inorder traversal of the given tree?

What will be the inorder traversal of the given tree?



8.

- a. 25 15 35 45 75
- b. 15 25 35 75 45
- c. 45 25 75 15 35
- d. 15 25 35 45 75 ✓^{HB}

9. Which of the following is a non-linear data structure?

- a. Linked List
- b. Tree ✓^{HB}
- c. Queue
- d. Stack

FOR PAID SOLUTIONS CONTACT 03147094561

1. Convert the given infix form: $12 + 60 - 23$ of expression in postfix form.
 - a. $12\ 60\ +\ -23$
 - b. $12+\ 60\ 23\ -$
 - c. $+12\ 60\ -\ 23$
 - d. $12\ 60\ +\ 23\ -$ ✓^{HB}

2. Each operator in a postfix expression refers to the previous _____ operand(s).
 - a. two ✓^{HB}
 - b. four
 - c. three
 - d. one

3. Which of the following is known as "Last-In, First-Out" or LIFO Data Structure?
 - a. Stack ✓^{HB}
 - b. Queue
 - c. Tree
 - d. Linked List

FOR PAID SOLUTIONS CONTACT 03147094561

4. Which operation of queue data structure is used to insert an element into the Queue?

- a. **enqueue()** ✓^{HB}
- b. dequeue()
- c. remove()
- d. front()

5. Suppose a Stack class has been defined using template. Now, we want to declare a Stack object of an int type. What will be the correct syntax?

- a. **Stack<int> stack;** ✓^{HB}
- b. Stack int stack;
- c. int Stack stack ;
- d. <int>Stack stack ;

6. The usage of the class of a data structure causes the code of the program

- a. **Simplifies** ✓^{HB}
- b. Difficult
- c. Lengthy
- d. Complicated

FOR PAID SOLUTIONS CONTACT 03147094561

7. A stack carries _____ behavior.
- a. FEFO
 - b. AVCO
 - c. **LIFO** ✓^{HB}
 - d. FIFO
8. Linked List use _____ to store data.
- a. Array
 - b. Variables
 - c. 2-D Array
 - d. **Linked Memory** ✓^{HB}
9. In which data structure elements are inserted at the back and removed from the front?
- a. Tree
 - b. Stack
 - c. Linked List
 - d. **Queue** ✓^{HB}
10. In the calling function, after the execution of the function called, the program continues its execution from the _____ after the function call.

FOR PAID SOLUTIONS CONTACT 03147094561

- a. Next line ✓^{HB}
 - b. Beginning
 - c. End
 - d. Previous line
11. `int * i = new int [10];`
12. Above given code will:
- a. Allocate memory for 9 integers
 - b. Create 10 pointers of integer type
 - c. Allocate memory for 10 integers ✓^{HB}
 - d. Create an integer having value 10
13. The first step to add a node in a linked list between the existing nodes is
- a. `currentNode->getNext();`
 - b. `newNode->getNext();`
 - c. `newNode->setNext();`
 - d. `newNode->setNext(currentNode->getNext());` ✓^{HB}
14. To create a _____ we link the last node with the first node in the list.
- a. Double linked list
 - b. Linked list

FOR PAID SOLUTIONS CONTACT 03147094561

- c. **Circularly-linked list** ✓^{HB}
 - d. List
15. "--" is a _____ operator.
- a. **Unary** ✓^{HB}
 - b. Logical
 - c. Technical
 - d. Binary
16. In singly linked list "next" field of node contains:
- a. Object of next node
 - b. **Address of next node** ✓^{HB}
 - c. Address of head node
 - d. Object of current node
17. Stack.push(15) will push 15 on _____.
- a. Anywhere in the Stack
 - b. **Top of the Stack** ✓^{HB}
 - c. Middle of the Stack
 - d. Bottom of Stack
18. Which one option is associated with the data structures?
- a. Class

FOR PAID SOLUTIONS CONTACT 03147094561

- b. Time to perform each basic operation ✓^{HB}
 - c. Function
 - d. Quality
19. Which of the following line of code is incorrect?

- a. float *i = float new; ✓^{HB}
 - b. float *i = new float;
 - c. float i = 60;
 - d. float *i = new float[3];
20. Josephus problem is resolved by the implementation of _____.

- a. Stack
- b. Queue
- c. List
- d. Circular linked list ✓^{HB}

PAID SOLUTIONS CONTACT 03147094561

HB

THANKS FOR WATCHING!

FOR PAID SOLUTIONS CONTACT 03147094561

WHATSAPP GROUP 2

[JOIN NOW](#)

JOIN WHATSAPP CHANNEL

[JOIN NOW](#)

1. Which one of the following case is the most complicated case to delete a node from BST?

- a. No case is complicated
- b. Node to be deleted has either left child or right child
- c. Node to be deleted has both the left and right children
- d. Node to be deleted is the leaf node

@studywithhamza25

2. When a function calling itself is called as _____.

- a. Nested loop
- b. Inline
- c. Iteration
- d. Recursion

3. A _____ is a tree in which every level, except possibly the last, is completely filled.

- a. Full Binary Tee
- b. Strict Binary tree
- c. Complete binary tree
- d. Perfect Binary tree

4. Which one is not the property of binary tree?

- a. Every node in binary tree should have maximum two children.
- b. Non-root nodes should have one parent
- c. Only one node should have two parents.
- d. Sibling nodes should have same parent.

5. Two common models of simulation are _____ and _____.

- a. Circuit based simulation and Object oriented simulation

- b. Time-based simulation and Event-based simulation
@studywithhamza25
 - c. Circuit-based simulation and Event-based simulation
 - d. Circuit-based simulation and Time-based simulation
6. _____ parameter passing (by value or by reference) is similar to PASCAL.
- a. JAVA @studywithhamza25
 - b. FORTRAN
 - c. C++
 - d. COBOL
7. Suppose we want to create the left child of a node 'p' and set the value x in it. Which of the following statement is correct for this operation?
- a. Left(x, p)
 - b. setLeft(x, p) @studywithhamza25
 - c. Left(p, x)
 - d. setLeft(p, x)
8. Consider an array `int x[] = {14,15,4,9,7,18,3}`. Which statement will be used to set first number of the list into the root node.
- a. `root->setInfo(&x[1]);`
 - b. `setInfo -> root(&x[1]);`
 - c. `setInfo -> root(&x[0]);`
 - d. `root->setInfo(&x[0]);` @studywithhamza25
9. When a function calls another function, the parameters and return address of the calling function are put in _____.
- a. Binary Tree
 - b. Heap
 - c. Queue
 - d. Stack @studywithhamza25
10. Left, right, info, and parent are the operations of _____ data structure.
- a. Linked List
 - b. Stack
 - c. Tree @studywithhamza25

WHATSAPP GROUP 2

[JOIN NOW](#)

JOIN WHATSAPP CHANNEL

[JOIN NOW](#)

1. Which one of the following case is the most complicated case to delete a node from BST?

- a. No case is complicated
- b. Node to be deleted has either left child or right child
- c. Node to be deleted has both the left and right children
- d. Node to be deleted is the leaf node

@studywithhamza25

2. When a function calling itself is called as _____.

- a. Nested loop
- b. Inline
- c. Iteration
- d. Recursion

3. A _____ is a tree in which every level, except possibly the last, is completely filled.

- a. Full Binary Tee
- b. Strict Binary tree
- c. Complete binary tree
- d. Perfect Binary tree

4. Which one is not the property of binary tree?

- a. Every node in binary tree should have maximum two children.
- b. Non-root nodes should have one parent
- c. Only one node should have two parents.
- d. Sibling nodes should have same parent.

5. Two common models of simulation are _____ and _____.

- a. Circuit based simulation and Object oriented simulation

- b. Time-based simulation and Event-based simulation
@studywithhamza25
 - c. Circuit-based simulation and Event-based simulation
 - d. Circuit-based simulation and Time-based simulation
6. _____ parameter passing (by value or by reference) is similar to PASCAL.
- a. JAVA @studywithhamza25
 - b. FORTRAN
 - c. C++
 - d. COBOL
7. Suppose we want to create the left child of a node 'p' and set the value x in it. Which of the following statement is correct for this operation?
- a. Left(x, p)
 - b. setLeft(x, p) @studywithhamza25
 - c. Left(p, x)
 - d. setLeft(p, x)
8. Consider an array `int x[] = {14,15,4,9,7,18,3}`. Which statement will be used to set first number of the list into the root node.
- a. `root->setInfo(&x[1]);`
 - b. `setInfo -> root(&x[1]);`
 - c. `setInfo -> root(&x[0]);`
 - d. `root->setInfo(&x[0]);` @studywithhamza25
9. When a function calls another function, the parameters and return address of the calling function are put in _____.
- a. Binary Tree
 - b. Heap
 - c. Queue
 - d. Stack @studywithhamza25
10. Left, right, info, and parent are the operations of _____ data structure.
- a. Linked List
 - b. Stack
 - c. Tree @studywithhamza25

1. The total number of nodes on 10th level of a perfect binary tree are :
 - a. 256
 - b. 1024
 - c. 512 ✓ *SPARKY*
 - d. Can't be determined
2. The worst case of building a heap of N keys is _____ .
 - a. N ✓ *SPARKY*
 - b. NlogN
 - c. N²
 - d. 2^N
3. The expression `if (! heap->isFull())` check
 - a. Heap is not full ✓ *SPARKY*
 - b. Heap is not empty
 - c. Heap is full
 - d. Heap is empty
4. If there are N internal nodes in a binary tree then what will be the no. of external nodes in this binary tree?
 - a. N-1
 - b. N+1 ✓ *SPARKY*
 - c. N+2
 - d. N
5. A binary tree with 33 internal nodes has _____ links to internal nodes.
 - a. 33
 - b. 31
 - c. 32 ✓ *SPARKY*

FOR PAID SOLUTIONS CONTACT 03147094561

d. 34

6. In complete binary tree the bottom level is filled from

- a. None of the given options
- b. Not filled at all
- c. Right to left

d. Left to right ✓ *SPARKY*

7. Suppose there are a set of fruits and a set of vegetables.

Both sets are ----- sets.

- a. Whole
- b. Equal

c. Disjoint ✓ *SPARKY*

d. Subsets

8. The total number of nodes on 5th level of a perfect binary tree are :

a. 32

b. 16 ✓ *SPARKY*

c. 31

d. 15

9. In threaded binary tree, the NULL pointers are replaced by the

a. postorder successor or predecessor

b. preorder successor or predecessor

c. NULL pointers are not replaced

d. inorder successor or predecessor ✓ *SPARKY*

FOR PAID SOLUTIONS CONTACT 03147094561