Hall Ticket No:

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

**II B.Tech I Semester (MR20-2020-21 Batch) Mid Term Examinations-I, December-2021**

Branch: **Computer Science and Engineering**  Subject Name : **Data Structures Answer ALL the Questions** Time: **90 Mins** Date:

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| --- | --- | --- | --- | --- |
| **S**  **NO.** | **Questions** | **Marks** | **BT Level** | **CO** |
|  | **Module-1** |  |  |  |
| **1** | Differentiate linear and non-linear data structure | 5 | L4 | 1 |
| **2** | Explain indetail about   1. Data structures 2. Abstract data type 3. Linked list 4. Stack 5. Queue | 5 | L2 | 1 |
| **3** | Implement creation and insertion of a node using singly linked list. | 5 | L3 | 1 |
| **4** | Explain the deletion and traversing of nodes in singly linked list with an example. | 5 | L2 | 1 |
| **5** | Illustrate the various applications of stacks? | 5 | L2 | 1 |
| **6** | Differentiate between Stacks and Queue. | 5 | L4 | 1 |
| **7** | Implement enqueue and dequeue operations of queue using array and linked list representation. | 5 | L3 | 1 |
| **8** | Construct a stack using array and linked list representation. | 5 | L5 | 1 |

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| **S**  **NO.** | **Questions** | **Marks** | **BT Level** | **CO** |
|  | **Module-2** |  |  |  |
| **1** | Explain dictionary and its applications. | 5 | L2 | 2 |
| **2** | Describe the operations of skip list with an example. | 5 | L2 | 2 |
| **3** | Describe the operations of Linear list with an example. | 5 | L3 | 2 |
| **4** | Explain Linear list representation in dictionaries. | 5 | L2 | 2 |
| **5** | Explain the following terms.   1. Hashing 2. Hash table 3. Hash function 4. Load factor | 5 | L2 | 2 |
| **6** | Explain different Hash function methods in detail. Explain each one with example. | 5 | L2 | 2 |
| **7** | Explain collision resolution techniques with examples  Chaining  Double hashing | 5 | L2 | 2 |
| **8** | Insert the following list of elements into the hash table by using Linear Probing and quadratic probing (size of the hash table is 10)  36,48,66,27,23,87,10,12. | 5 | L3 | 2 |

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| **S**  **NO.** | **Questions** | **Marks** | **BT Level** | **CO** |
|  | **Module-3** |  |  |  |
| **1** | Explain the Binary Tree operation with an example | 5 | L2 | 3 |
| **2** | Construct the binary tree of the following data  25,30,10,9,62,5,18,43,53. | 5 | L5 | 3 |
| **3** | Describe the properties of binary trees? Explain. | 5 | L2 | 3 |
| **4** | Explain briefly about binary search trees and its operations. | 5 | L2 | 3 |

**Prepared By Name:**

**Signature: HOD Signature**

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**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

**II B.Tech I Semester (MR20-2020-21 Batch) Mid Term Examinations-I, December-2021**

Subject Code & Name: A0509-**DATA STRUCTURES** Max. Marks: **25M**

Branch:**CSE & IT** Time: **90 Mins** Date: **13.12.2021 FN**

**Answer ALL the Questions:**

|  |  |  |
| --- | --- | --- |
| **S.**  **NO.** | **Questions** | **Ans** |
|  | **Model-1** |  |
| 1 | -- Condition is checked for stack overflow  **a) Maxsize-1**  b) Top==-1  c) Top=0  d) Max+1 |  |
| 2 | ----Condition is checked or queue underflow  a) rear==max-1  b)front==-1  c) rear-front  d)B and C |  |
| 3 | Stacks and queues are represented by  a) Arrays  b) Linked list  c) Both Aand B  d)None |  |
| 4 | Which of the following is a nonlinear data structure  a) Trees  b)Stacks  c) Queues  d)None |  |
| 5 | Underflow condition is checked before  a) Inserting  b) Deleting  c) Both  d) None |  |
| 6 | Overflow condition is checked before  a) Insertion  b)Deletion  c) Both  d)None |  |
| 7 | LIFO is the concept of ---data structure  a) Queues  b) Stacks  c) Trees  d)Graphs |  |
| 8 | Which of these best describes an array? a) A data structure that shows a hierarchical behavior b) Container of objects of similar types c) Arrays are immutable once initialised d) Array is not a data structure |  |
| 9 | How do you initialize an array in C? a) int arr[3] = (1,2,3); b) int arr(3) = {1,2,3}; c) int arr[3] = {1,2,3}; d) int arr(3) = (1,2,3); |  |
| 10 | Which of the following concepts make extensive use of arrays? a) Binary trees b) Scheduling of processes c) Caching d) Spatial locality |  |
| 11 | Assuming int is of 4bytes, what is the size of int arr[15];? a) 15 b) 19 c) 11 d) 60 |  |
| 12 | Elements in an array are accessed \_\_\_\_\_\_\_\_\_\_\_\_\_ a) randomly b) sequentially c) exponentially d) logarithmically |  |
| 13 | Process of inserting an element in stack is called \_\_\_\_\_\_\_\_\_\_\_\_ a) Create b) Push c) Evaluation d) Pop |  |
| 14 | Process of removing an element from stack is called \_\_\_\_\_\_\_\_\_\_ a) Create b) Push c) Evaluation d) Pop |  |
| 15 | In a stack, if a user tries to remove an element from an empty stack it is called \_\_\_\_\_\_\_\_\_ a) Underflow b) Empty collection c) Overflow d) Garbage Collection |  |
| 16 | Pushing an element into stack already having five elements and stack size of 5, then stack becomes \_\_\_\_\_\_\_\_\_\_\_ a) Overflow b) Crash c) Underflow d) User flow |  |
| 17 | Entries in a stack are “ordered”. What is the meaning of this statement? a) A collection of stacks is sortable b) Stack entries may be compared with the ‘<‘ operation c) The entries are stored in a linked list d) There is a Sequential entry that is one by one |  |
| 18 | Which of the following is not the application of stack? a) A parentheses balancing program b) Tracking of local variables at run time c) Compiler Syntax Analyzer d) Data Transfer between two asynchronous process |  |
| 19 | What is the value of the postfix expression 6 3 2 4 + – \*? a) 1 b) 40 c) 74 d) -18 |  |
| 20 | A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as \_\_\_\_\_\_\_\_\_\_\_\_\_ a) Queue b) Stack c) Tree d) Linked list |  |
| 21 | A queue follows \_\_\_\_\_\_\_\_\_\_ a) FIFO (First In First Out) principle b) LIFO (Last In First Out) principle c) Ordered array d) Linear tree |  |
| 22 | If the elements “A”, “B”, “C” and “D” are placed in a queue and are deleted one at a time, in what order will they be removed? a) ABCD b) DCBA c) DCAB d) ABDC |  |
| 23 | A data structure in which elements can be inserted or deleted at/from both ends but not in the middle is? a) Queue b) Circular queue c) Dequeue d) Priority queue |  |
| 24 | A normal queue, if implemented using an array of size MAX\_SIZE, gets full when? a) Rear = MAX\_SIZE – 1 b) Front = (rear + 1)mod MAX\_SIZE c) Front = rear + 1 d) Rear = front |  |
| 25 | Which of the following is not the type of queue? a) Ordinary queue b) Single ended queue c) Circular queue d) Priority queue |  |
| 26 | A linear collection of data elements where the linear node is given by means of pointer is called? a) Linked list b) Node list c) Primitive list d) Unordered list |  |
| 27 | In linked list each node contains a minimum of two fields. One field is data field to store the data second field is? a) Pointer to character b) Pointer to integer c) Pointer to node d) Node |  |
| 28 | What would be the asymptotic time complexity to add a node at the end of singly linked list, if the pointer is initially pointing to the head of the list? a) O(1) b) O(n) c) θ(n) d) θ(1) |  |
| 29 | What would be the asymptotic time complexity to insert an element at the front of the linked list (head is known)? a) O(1) b) O(n) c) O(n2) d) O(n3) View A |  |
| 30 | What kind of linked list is best to answer questions like “What is the item at position n?” a) Singly linked list b) Doubly linked list c) Circular linked list d) Array implementation of linked list |  |
| 31 | Linked lists are not suitable for the implementation of \_\_\_\_\_\_\_\_\_\_\_ a) Insertion sort b) Radix sort c) Polynomial manipulation d) Binary search |  |
| 32 | Linked list is considered as an example of \_\_\_\_\_\_\_\_\_\_\_ type of memory allocation. a) Dynamic b) Static c) Compile time d) Heap |  |
| 33 | The result of evaluating the postfix expression 5, 4, 6, +, \*, 4, 9, 3, /, +, \* is? a) 600 b) 350 c) 650 d) 588 |  |
| 34 | Convert the following infix expressions into its equivalent postfix expressions. **(A + B ⋀D)/(E – F)+G**  a) (A B D ⋀ + E F – / G +) b) (A B D +⋀ E F – / G +) c) (A B D ⋀ + E F/- G +) d) (A B D E F + ⋀ / – G +) |  |
| 35 | Which of the following statement(s) about stack data structure is/are NOT correct? a) Linked List are used for implementing Stacks b) Top of the Stack always contain the new node c) Stack is the FIFO data structure d) Null link is present in the last node at the bottom of the stack |  |
| 36 | After the completion of all operation, the number of elements present in stack is? a) 1 b) 2 c) 3 d) 4 |  |
| 37 | Which of the following is not an inherent application of stack? a) Reversing a string b) Evaluation of postfix expression c) Implementation of recursion d) Job scheduling |  |
| 38 | The type of expression in which operator succeeds its operands is? a) Infix Expression b) Prefix Expression c) Postfix Expression d) Both Prefix and Postfix Expressions |  |
| 39 | To implement a stack using queue(with only enqueue and dequeue operations), how many queues will you need? a) 1 b) 2 c) 3 d) 4 |  |
| 40 | What is the best case time complexity of deleting a node in a Singly Linked list? a) O (n) b) O (n2) c) O (nlogn) d) O (1) |  |
| 41 | Which of the following statements are not correct with respect to Singly Linked List(SLL) and Doubly Linked List(DLL)? a) Complexity of Insertion and Deletion at known position is O(n) in SLL and O(1) in DLL b) SLL uses lesser memory per node than DLL c) DLL has more searching power than SLL d) Number of node fields in SLL is more than DLL |  |
| 43 | What does ‘stack overflow’ refer to? a) accessing item from an undefined stack b) adding items to a full stack c) removing items from an empty stack d) index out of bounds exception |  |
| 44 | Consider these functions: push() : push an element into the stack pop() : pop the top-of-the-stack element top() : returns the item stored in top-of-the-stack-node What will be the output after performing these sequence of operations  push(20);  push(4);  top();  pop();  pop();  pop();  push(5);  top();  a) 20 b) 4 c) stack underflow d) 5 |  |
| 45 | Minimum number of queues to implement stack is \_\_\_\_\_\_\_\_\_\_\_ a) 3 b) 4 c) 1 d) 2 |  |
| 46 | Which is the most appropriate data structure for reversing a word? a) queue b) stack c) tree d) graph |  |
| 47 | What will be the word obtained if the word “abbcabb” is reversed using a stack? a) bbabbca b) abbcabb c) bbacbba d) bbacabb |  |
| 48 | How many stacks are required for reversing a word algorithm? a) one b) two c) three d) four |  |
| 49 | What will be result if the given stack is popped? [data-structures-questions-answers-reverse-word-stack-q7](https://www.sanfoundry.com/wp-content/uploads/2017/09/data-structures-questions-answers-reverse-word-stack-q7.png) a) pat b) tap c) atp d) apt |  |
| 50 | What will be output if the following sequence of operations are executed?  Push(a,s);  Push(b,s);  Pop(b);  Push(c,s);  a) abc b) b c) ac d) acb |  |
|  | Model-2 |  |
| 51 | --- Is a technique of mapping keys and values in to hash table  a) Mapping  b) Collision  c) Indexing  d) Hashing |  |
| 52 | --- is a data structure which is used for storing and accessing data very quickly  a) Hash table  b) Trees  c) Graphs  d) Probing |  |
| 53 | ---- is a situation in which hash function has to written same hash key for more than one record  a) Overflow  b) Collision  c) Underflow  d) Hashing |  |
| 54 | Which of the following is not a type of collision resolution technique  a) Chaining  b) Linear probing  c) Quadratic probing  d)Hashing |  |
| 55 | In ---- Hashing we use two hash functions  a) Quadratic probing  b) Linear hashing  c) Rehashing  d)Double hashing |  |
| 56 | Which of the following points is/are true about Linked List data structure when it is compared with array   |  |  | | --- | --- | | a) | Arrays have better cache locality that can make them better in terms of performance. | | b) | It is easy to insert and delete elements in Linked List | | c) | Random access is not allowed in a typical implementation of Linked Lists | | d) | All of the above | |  |  | |  |
| 57 | A linear collection of data elements where the linear node is given by means of pointer is called?  a) Linked list b) Node list c) Primitive list d) None |  |
| 58 | Which of the following operations is performed more efficiently by doubly linked list than by singly linked list?  a) Deleting a node whose location in given b) Searching of an unsorted list for a given item c) Inverting a node after the node with given location d) Traversing a list to process each node |  |
| 59 | Consider an implementation of unsorted singly linked list. Suppose it has its representation with a head and tail pointer. Given the representation, which of the following operation can be implemented in O(1) time?  i) Insertion at the front of the linked list ii) Insertion at the end of the linked list iii) Deletion of the front node of the linked list iv) Deletion of the last node of the linked list  a) I and II b) I and III c) I,II and III d) I,II and IV |  |
| 60 | In linked list each node contain minimum of two fields. One field is data field to store the data second field is?  a) Pointer to character b) Pointer to integer c) Pointer to node d) Node |  |
| 61 | What would be the asymptotic time complexity to add a node at the end of singly linked list, if the pointer is initially pointing to the head of the list?  a) O(1) b) O(n) c) θ (n) d) θ (1) |  |
| 62 | What would be the asymptotic time complexity to add an element in the linked list?  a) O(1) b) O(n) c) O(n2) d) None |  |
| 63 | What is a hash table? a) A structure that maps values to keys b) A structure that maps keys to values c) A structure used for storage d) A structure used to implement stack and queue |  |
| 64 | If several elements are competing for the same bucket in the hash table, what is it called? a) Diffusion b) Replication c) Collision d) Duplication |  |
| 65 | What is direct addressing? a) Distinct array position for every possible key b) Fewer array positions than keys c) Fewer keys than array positions d) Same array position for all keys |  |
| 66 | What is the search complexity in direct addressing? a) O(n) b) O(logn) c) O(nlogn) d) O(1) |  |
| 67 | What is a hash function? a) A function has allocated memory to keys b) A function that computes the location of the key in the array c) A function that creates an array d) A function that computes the location of the values in the array |  |
| 68 | Which of the following is not a technique to avoid a collision? a) Make the hash function appear random b) Use the chaining method c) Use uniform hashing d) Increasing hash table size |  |
| 69 | What is the load factor? a) Average array size b) Average key size c) Average chain length d) Average hash table length |  |
| 70 | What is simple uniform hashing? a) Every element has equal probability of hashing into any of the slots b) A weighted probabilistic method is used to hash elements into the slots c) Elements has Random probability of hashing into array slots d) Elements are hashed based on priority |  |
| 71 | In simple uniform hashing, what is the search complexity? a) O(n) b) O(logn) c) O(nlogn) d) O(1) |  |
| 72 | In simple chaining, what data structure is appropriate? a) Singly linked list b) Doubly linked list c) Circular linked list d) Binary trees |  |
| 73 | What is the hash function used in Double Hashing? a) (h1(k) – i\*h2(k))mod m b) h1(k) + h2(k) c) (h1(k) + i\*h2(k))mod m d) (h1(k) + h2(k))mod m |  |
| 74 | On what value does the probe sequence depend on? a) c1 b) k c) c2 d) m |  |
| 75 | What are the values of h1(k) and h2(k) in the hash function? a) h1(k) = m mod k  h2(k) = 1+ (m’ mod k)  b) h1(k) = 1 + (m mod k)  h2(k) = m’ mod k  c) h1(k) = 1+ (k mod m)  h2(k) = k mod m  d) h1(k) = k mod m  h2(k) = 1+ (k mod m’) |  |
| 76 | What is the running time of double hashing? a) Theta(m) b) Theta(m2) c) Theta(m log k) d) Theta(m3) |  |
| 77 | Which technique has the greatest number of probe sequences? a) Linear probing b) Quadratic probing c) Double hashing d) Closed hashing |  |
| 78 | Which of the following schemes does quadratic probing come under? a) rehashing b) extended hashing c) separate chaining d) open addressing |  |
| 79 | What kind of deletion is implemented by hashing using open addressing? a) active deletion b) standard deletion c) lazy deletion d) no deletion |  |
| 80 | Which of the following is the correct function definition for quadratic probing? a) F(i)=i2 b) F(i)=i c) F(i)=i+1 d) F(i)=i2+1 |  |
| 81 | How many constraints are to be met to successfully implement quadratic probing? a) 1 b) 2 c) 3 d) 4 |  |
| 82 | Which among the following is the best technique to handle collision? a) Quadratic probing b) Linear probing c) Double hashing d) Separate chaining |  |
| 83 | Which of the following techniques offer better cache performance? a) Quadratic probing b) Linear probing c) Double hashing d) Rehashing |  |
| 84 | What is the formula used in quadratic probing? a) Hash key = key mod table size b) Hash key=(hash(x)+F(i)) mod table size c) Hash key=(hash(x)+F(i2)) mod table size d) H(x) = x mod 17 |  |
| 85 | What is the load factor for an open addressing technique? a) 1 b) 0.5 c) 1.5 d) 0 |  |
| 86 | How many probes are required on average for insertion and successful search? a) 4 and 10 b) 2 and 6 c) 2.5 and 1.5 d) 3.5 and 1.5 |  |
| 87 | The elements of a linked list are stored  a) In a structure  b) In an array  c) Anywhere the computer has space for them  d) In contiguous memory locations |  |
| 88 | Which of the following is not a collision free resolution techniques in hash table using linear open addressing?  a) Rehashing  b) Clustering  c) Linear Probing  d) Quadratic probing |  |
| 89 | The case in which a key other than the desired one is kept at the identified location is called? a) Hashing b) Collision c) Chaining d) Open addressing |  |
| 90 | What data organization method is used in hash tables? a) Stack b) Array c) Linked list d) Queue |  |
| 91 | The task of generating alternative indices for a node is called? a) Collision handling b) Collision detection c) Collision recovery d) Closed hashing |  |
| 92 | Which of the following is not a collision resolution technique? a) Separate chaining b) Linear probing c) Quadratic probing d) Hashing |  |
| 93 | In a hash table of size 10, where is element 7 placed? a) 6 b) 7 c) 17 d) 16 |  |
| 94 | Which of the following operations are done in a hash table? a) Insert only b) Search only c) Insert and search d) Replace |  |
| 95 | Which of the following is identical to that of a separate chaining hash node? a) Linked list b) Array c) Stack d) Queue |  |
| 96 | Which of the following is the hashing function for separate chaining? a) H(x)=(hash(x)+f(i)) mod table size b) H(x)=hash(x)+i2 mod table size c) H(x)=x mod table size d) H(x)=x mod (table size \* 2) |  |
| 97 | What is the correct notation for a load factor? a) Ω b) ∞ c) ∑ d) ⅄ |  |
| 98 | In hash tables, how many traversal of links does a successful search require? a) 1+⅄ b) 1+⅄2 c) 1+ (⅄/2) d) ⅄3 |  |
| 99 | What is the worst case search time of a hashing using separate chaining algorithm? a) O(N log N) b) O(N) c) O(N2) d) O(N3) |  |
| 100 | From the given table, find ‘?’. Given: hash(x)= x mod 10 [hash-tables-chaining-linked-lists-questions-answers-q15](https://www.sanfoundry.com/wp-content/uploads/2018/07/hash-tables-chaining-linked-lists-questions-answers-q15.png) a) 13 b) 16 c) 12 d) 14 |  |
|  | Model-3 |  |
| 101 | To perform level-order traversal on a binary tree, which of the following data structure will be required?  a) Hash table  b) Queue  c) Binary search tree  d) Stack |  |
| 102 | A binary tree in which all its levels except the last, have maximum numbers of nodes, and all the nodes in the last level have only one child it will be its left child. Name the tree.  a) Threaded tree  b) Complete binary tree  c) M-way search tree  d) Full binary tre |  |
| 103 | If two trees have same structure and but different node content, then they are called \_\_\_  a) Synonyms trees  b) Joint trees  c) Equivalent trees  d) Similar trees |  |
| 104 | If two trees have same structure and node content, then they are called \_\_\_\_  a) Synonyms trees  b) Joint trees  c) Equivalent trees  d) Similar trees |  |
| 105 | Finding the location of a given item in a collection of items is called ……  a) Discovering  b) Finding  c) Searching  d) Mining |  |
| 106 | Which of the following is non-liner data structure?  a) Stacks  b) List  c) Strings  d) Trees |  |
| 107 | To represent hierarchical relationship between elements, which data structure is suitable?  a) Dequeue  b) Priority  c) Tree  d) Graph |  |
| 108 | What is the speciality about the inorder traversal of a binary search tree? a) It traverses in a non increasing order b) It traverses in an increasing order c) It traverses in a random fashion d) It traverses based on priority of the node |  |
| 109 | Left- Right – Root of what traversal method  a) Preorder traversal b) Inorder traversal c) Postorder traversal d) Level order traversal |  |
| 110 | Given a binary search tree, which traversal type would print the values in the nodes in sorted order?  a) Preorder  b) Postorder  **c) Inorder**  d) None of the above |  |
| 111 | What are the worst case and average case complexities of a binary search tree? a) O(n), O(n) b) O(logn), O(logn) c) O(logn), O(n) d) O(n), O(logn) |  |
| 112 | What are the worst case and average case complexities of a binary search tree? a) O(n), O(n) b) O(logn), O(logn) c) O(logn), O(n) d) O(n), O(logn) |  |
| 113 | What are the conditions for an optimal binary search tree and what is its advantage? a) The tree should not be modified and you should know how often the keys are accessed, it improves the lookup cost b) You should know the frequency of access of the keys, improves the lookup time c) The tree can be modified and you should know the number of elements in the tree before hand, it improves the deletion time d) The tree should be just modified and improves the lookup time |  |
| 114 | Construct a binary search tree with the below information. The preorder traversal of a binary search tree 10, 4, 3, 5, 11, 12. a) [data-structure-questions-answers-binary-search-tree-q11a](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-search-tree-q11a.png) b) [data-structure-questions-answers-binary-search-tree-q11b](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-search-tree-q11b.png) c) [data-structure-questions-answers-binary-search-tree-q11c](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-search-tree-q11c.png) d) [data-structure-questions-answers-binary-search-tree-q11d](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-search-tree-q11d.png) |  |
| 115 | The number of edges from the root to the node is called \_\_\_\_\_\_\_\_\_\_ of the tree. a) Height b) Depth c) Length d) Width |  |
| 116 | What is a full binary tree? a) Each node has exactly zero or two children b) Each node has exactly two children c) All the leaves are at the same level d) Each node has exactly one or two children |  |
| 117 | What is a complete binary tree? a) Each node has exactly zero or two children b) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from right to left c) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from left to right d) A tree In which all nodes have degree 2 |  |
| 118 | What is the average case time complexity for finding the height of the binary tree? a) h = O(loglogn) b) h = O(nlogn) c) h = O(n) d) h = O(log n) |  |
| 119 | Which of the following is not an advantage of trees? a) Hierarchical structure b) Faster search c) Router algorithms d) Undo/Redo operations in a notepad |  |
| 120 | **Suppose we have numbers between 1 and 1000 in a binary search tree and want to search for the number 363. Which of the following sequence could not be the sequence of the node examined?**  a) 2, 252, 401, 398, 330, 344, 397, 363 b) 924, 220, 911, 244, 898, 258, 362, 363 **c) 925, 202, 911, 240, 912, 245, 258, 363** d) 2, 399, 387, 219, 266, 382, 381, 278, 363 |  |
| 121 | The following numbers are inserted into an empty binary search tree in the given order  10,1,3,5,15,12,16 What is the height of the Binary search Tree?  a) 3  b) 4  c) 5  d) 6 |  |
| 122 | In a full binary tree if there are L leaves, then total number of nodes N are? a) N = 2\*L b) N = L + 1 c) N = L – 1 d) N = 2\*L – 1 |  |
| 123 | How many distinct binary search trees can be created out of 4 distinct keys? (A) 4 (B) 14 (C) 24 (D) 42 |  |
| 124 | Construct a binary tree by using postorder and inorder sequences given below. Inorder: N, M, P, O, Q Postorder: N, P, Q, O, M a) [data-structure-questions-answers-binary-tree-properties-q11a](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-tree-properties-q11a.png)b) [data-structure-questions-answers-binary-tree-properties-q11b](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-tree-properties-q11b.png)c) [data-structure-questions-answers-binary-tree-properties-q11c](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-tree-properties-q11c.png)d) [data-structure-questions-answers-binary-tree-properties-q11d](https://www.sanfoundry.com/wp-content/uploads/2017/08/data-structure-questions-answers-binary-tree-properties-q11d.png) |  |
| 125 | Which of the following traversals is sufficient to construct BST from given traversals   1. Inorder 2. Preorder 3. Postorder   a)Any of the three traversals is sufficient  b) Either 2 or 3 is sufficient  c) 2 and 3  d) 1 and 3 |  |

**Prepared By Name:**

**Signature: HOD Signature**