### **Multiple Choice Questions for Data Structures**

(Talib Sir)

### **1. What is a data structure?**

#### **Programming language**

#### **Database Design**

#### Storage and Data Organization Technique

#### **collection of algorithms**

**Ans.** Data Structure is storing and organizing data in the computer memory. It is the branch of computer science that deals with arranging large datasets in such a manner that they can be accessed and modified as per the requirements.

### **2. The insertion operation in the stack is known as:**

#### **Add**

#### Push

#### **Insert**

#### **Interpolate**

Ans. Pushing means inserting an element at the top of the stack.

### **3. How can array elements be accessed?**

#### randomly

#### **sequentially**

#### **exponentially**

#### **logarithmically**

**Ans.** The array elements are stored at contagious memory locations that can be randomly accessed with their index number.

### **4. Which of the following cases does not exist in complexity theory?**

#### **Best case**

#### **Worst case**

#### **Average case**

#### Empty Case

### **5. Which data structure is based on the First In Last Out (FILO) principle?**

#### **Queue**

#### Stack

#### **Tree**

#### **Graph**

Ans. The last inserted element is available first and is the first one to be deleted. Hence, it is known as Last In, First Out LIFO, or First In, Last Out FILO.

### **6. The prefix form of ((a/b)+c)-(d+(e\*f)) is?**

#### - + / a b c + d \* e f

#### **+ - / a b c + d \* e f**

#### **- + a / b c d + \* e f**

#### **- / a b + c + d \* e f**

**Ans.** Let's see the step-by-step conversion of the infix expression, "**((a/b)+c)-(d+(e\*f))**" into prefix:

1. Reverse the Infix Expression: **))f\*e(+d(-)c+)b/a((**
2. Interchange '(' with ')' and vice versa: **((f\*e)+d)-(c+(b/a))**
3. Apply postfix

|  |  |  |  |
| --- | --- | --- | --- |
| **Expression** | **Stack** | **Operation** | **Output** |
| ((f\*e)+d)-(c+(b/a)) | ( | Push |  |
| (f\*e)+d)-(c+(b/a)) | (( | Push |  |
| f\*e)+d)-(c+(b/a)) | (( |  | f |
| \*e)+d)-(c+(b/a)) | ((\* | Push | f |
| e)+d)-(c+(b/a)) | ((\* | - | fe |
| )+d)-(c+(b/a)) | (( | Pop | fe\* |
| +d)-(c+(b/a)) | ((+ | Push | fe\* |
| d)-(c+(b/a)) | ((+ |  | fe\*d |
| )-(c+(b/a)) | (( | Pop | fe\*d+ |
| -(c+(b/a)) | ((- | Push | fe\*d+ |
| (c+(b/a)) | ((-( | Push | fe\*d+ |
| c+(b/a)) | ((-( |  | fe\*d+c |
| +(b/a)) | ((-(+ | Push | fe\*d+c |
| (b/a)) | ((-(+( | Push | fe\*d+c |
| b/a)) | ((-(+( |  | fe\*d+cb |
| /a)) | ((-(+( / | Push | fe\*d+cb |
| a)) | ((-(+( / |  | fe\*d+cba |
| )) | ((-(+( | Pop | fe\*d+cba/ |
| ) | ((-( | Pop | fe\*d+cba/+ |
|  |  | Pop | fe\*d+cba/+- |

1. Reverse the postfix expression to get the prefix.

### **7. Which of the following applications uses a circular linked list?**

#### **Recursive function calls**

#### **Undo operation in a text editor**

#### **Implement Hash Tables**

#### Allocating CPU to resources

**Ans.** Round Robin is employed to allocate CPU time to resources using the circular linked list data structure.

### **8. What's the worst-case scenario in a linear search algorithm?**

#### **The element is somewhere in the middle of the array**

#### **The element is not present in the array**

#### **The element is the last in the array**

#### Either the element is the last in the array or is not there

### **9. Which of the following is not a balanced binary tree?**

#### **Splay tree**

#### **B-tree**

#### **AVL tree**

#### **Red-black tree**

**Ans.** B-Tree is a self-balancing tree where a node can have more than two children

### **10. Which of the following is not a type of queue?**

#### **Priority queue**

#### **Circular queue**

#### Single-ended queue

#### **Ordinary queue**

Ans. A queue is an ordered list in which insertion is done at one end and deletion at another.

### **11. The complexity of the average case of an algorithm is**

#### more complicated to analyze than the worst-case

#### **Much simpler to analyze than the worst-case**

#### **Sometimes more complicated and some other times simpler than the worst-case**

#### **None of the above**

### **12. The time complexity of the dequeue operation in a queue is**

#### O(1)

#### **O(n)**

#### **O(long)**

#### **O(n logn)**

**Ans.** The dequeue operation involves removing the front element and updating the front pointer.

### **13. How will you increment the rear end in a circular queue?**

#### **rear =rear+1**

#### (rear+1) % max

#### **(rear % max) + 1**

#### **None of the above**

**Ans.** The rear value will be from 0 to max-1. max is the total size of the circular queue. rear + 1 moves the rear pointer to the next position. (rear+1) % max will point to the first position in the queue maintaining the circular nature.

### **14. What would be the time complexity to find an element in the linked list?**

#### **O(1)**

#### O(n)

#### **O(n^2)**

#### **O(n^4)**

**Ans.** If the element is at the end of the linked list, we have to traverse through all the linked list elements.

### **15. Which sorting algorithm can sort a random linked list with minimum time complexity?**

#### **Insertion Sort**

#### **Quick Sort**

#### **Heap Sort**

#### Merge Sort

**Ans.** The worst-case time complexity of [**Merge Sort**](https://www.scholarhat.com/tutorial/datastructures/merge-sort-in-data-structures) is O(n Logn). Here, n is the number of elements in the linked list.

### **16. A one-dimensional array containing one-dimensional arrays is called**

#### Two-dimensional array

#### **Multi-casting array**

#### **Multi-dimensional array**

#### **Three-dimensional array**

### **17. The data structure used to check whether an expression contains a balanced parenthesis is?**

#### **Queue**

#### Stack

#### **Tree**

#### **Array**

Ans. Stack works according to the LIFO principle. Open parenthesis are pushed into the stack, and closed parenthesis pop out elements until the top element of the stack is its corresponding open parenthesis. If the stack is empty, the parenthesis are balanced.

### **18. Which algorithm stops the execution when it finds the solution otherwise start the problem from the top?**

#### Backtracking

#### **Divide and conquer**

#### **Branch and Bound**

#### **Dynamic programming**

**Ans.**Backtracking solves the problem recursively and removes the solution if it does not satisfy the problem constraints. Whenever a solution fails we trace back to the failure point, build on the next solution, and continue this process till we find the solution or all possible solutions are looked after.

### **19. Which of the following data structures does the**[**Tower of Hanoi**](https://www.scholarhat.com/tutorial/datastructures/tower-of-hanoi-in-data-structures)**algorithm use?**

#### **Queue**

#### **Linked List**

#### **Heap**

#### Stack

### **20. A binary search algorithm cannot be applied to**

#### Sorted linked list

#### **Sorted linear array**

#### **Sorted binary tree**

#### **Pointer array**

**Ans.** A [binary search](https://www.scholarhat.com/tutorial/datastructures/binary-search-in-data-structures) algorithm cannot be efficiently applied to a sorted linked list because it relies on random access to elements, which is a key feature of arrays but not linked lists.

### **21. What is an AVL tree?**

#### **an unbalanced and height-balanced tree**

#### a balanced and height-balanced tree

#### **a tree with at most 3 children**

#### **a tree with three children**

**Ans.** [AVL tree](https://www.scholarhat.com/tutorial/datastructures/avl-tree-in-data-structures) is a popular self-balancing binary search tree where the difference between the heights of left and right subtrees for any node does not exceed one. It automatically adjusts its structure to maintain the minimum possible height after any operation with the help of a balance factor for each node.

### **22. In a max-heap, the element with the greatest key is always in which node?**

#### **Leaf node**

#### **First node of left sub-tree**

#### root node

#### **First node of the right sub-tree**

**Ans.** In a max-heap, all the nodes (including the root) are greater than their respective child nodes. The key of the root node is always the largest among all other nodes.

### **23. In a binary search tree, which traversals would print the numbers in ascending order?**

#### **Level-order traversal**

#### **Pre-order traversal**

#### **Post-order traversal**

#### In-order traversal

**Ans.** In a [binary search tree,](https://www.scholarhat.com/tutorial/datastructures/binary-search-tree-in-data-structures) each left subtree has values below the root and each right subtree has values above the root. An in-order traversal first visits the left child, then visits the node, and finally, the right child.

### **24. When do you prefer Red-black trees over AVL trees?**

#### when there are more insertions or deletions

#### **when a large search operation is required**

#### **when the tree must be balanced**

#### **when log(nodes) time complexity is needed**

**Ans.** Red-Black Trees require fewer rotations to maintain balance. On average, a Red-Black Tree requires at most 2 rotations for insertion and 3 rotations for deletion, while AVL Trees may require more rotations.

### **25. A graph with all vertices having equal degree is known as a**

#### **Multi Graph**

#### Regular Graph

#### **Simple Graph**

#### **Complete Graph**

**Ans.** Regular Graph is an undirected graph where every vertex has the same number of edges or neighbors.

### **26. What is the term used when several elements compete for the same location in the hash table?**

#### **Diffusion**

#### **Replication**

#### Collision

#### **Duplication**

**Ans.** A hash collision refers to a situation where two different inputs produce the same hash value or hash code when processed by a hash function.

### **27. A full binary tree can be generated using**

#### post-order and pre-order traversal

#### **pre-order traversal**

#### **post-order traversal**

#### **in-order traversal**

**Ans.** A full binary tree is a tree in which every node has either 0 or 2 children.

### **28. B+ Trees are called balanced trees because**

#### the lengths of the paths from the root to all leaf nodes are equal.

#### **the lengths of the paths from the root to all leaf nodes differ from each other by at most 1**

#### **the number of children of any two non-leaf sibling nodes differs by at most 1**

#### **the number of records in any two leaf nodes differs by at most 1**

### **29. An algorithm design method is used when the solution to a problem can be viewed as the result of a sequence of decisions**

#### Dynamic programming

#### **Backtracking**

#### **Branch and bound**

#### **Greedy method**

**Ans.** This algorithm uses the already found solution to avoid repetitive calculation of the same part of the problem. It divides the problem into smaller overlapping subproblems, solves them, and stores the intermediate results.

### **30. Which algorithm type is used in solving the 4 Queens problem?**

#### **Greedy**

#### **Dynamic**

#### **Branch and Bound**

#### Backtracking

### **31. Given an undirected graph G with V vertices and E edges, what will be the sum of the degrees of all vertices?**

#### **E**

#### 2E

#### **V + E**

#### **2V**

**Ans.** The degree of a vertex in a graph is the number of edges connected to that vertex.

### **32. The necessary condition to be checked before deletion from the queue is**

#### **Overflow**

#### Underflow

#### **Rear value**

#### **Front value**

**Ans.** Before deletion, we need to check whether the queue is empty or not.

### **33. BFS is best compared to DFS in the case of**

#### **The graph’s width is large**

#### The graph’s depth is large

#### **The graph consists of many nodes**

#### **The graph is complex**

**Ans.** BFS explores all nodes at the present "depth" level before moving on to nodes at the next depth level. This ensures that the first time BFS reaches a node, it has found the shortest path to that node (in terms of the number of edges).

### **34. One of the differences between a queue and a stack is:**

#### **Queues require dynamic memory, but stacks do not.**

#### **Stacks require dynamic memory, but queues do not.**

#### Queues use two ends of the structure; stacks use only one**.**

#### **Stacks use two ends of the structure, and queues use only one**

**Ans.** The stack has only one end, the top, at which both insertion and deletion take place. A queue has two ends, rear and front, for insertion and deletion respectively.

### **35. Which array operations have a time complexity of O(1)?**

#### **Searching any element**

#### Accessing any element

#### **Inserting an element**

#### **deleting an element**

**Ans.** Accessing an element in an array can be done through indexing. So, it takes very little time.

### **36. What is the number of edges in a graph's minimum spanning tree with N vertices and E edges?**

#### **E - 1**

#### N - 1

#### **N + E - 1**

#### **N + E - 2**

**Ans.** The number of edges in a spanning tree is equal to the number of nodes or vertices minus one i.e. n-1.

### **37. What is the time complexity of the merge sort algorithm?**

#### **O(n)**

#### **O(n^2)**

#### **O(log n)**

#### O(n log n)

### **38. A self-balancing binary search tree can be used to implement**

#### Priority queue

#### **Hash table**

#### **Heap sort**

#### **Priority queue and Heap sort**

**Ans.** A self-balancing binary search tree can implement a priority queue by efficiently managing insertions, deletions, and minimum/maximum element retrieval in O(logn) time.

### **39. What would be the color of a newly created node while inserting a new element in a Red-black tree?**

#### **Black, if the new node is not a root node**

#### **Red, if the new node is not a root node**

#### **Black, if the new node is a root node**

#### Both b and c

**Ans.** If the newly created node is a root node, then it will be Black; otherwise, it will be Red.

### **40. Which one of the following algorithms does not return the optimal solution?**

#### **Dynamic Programming**

#### Backtracking

#### **Branch and Bound**

#### **Greedy Method**

**Ans.** Backtracking solves the problem recursively and removes the solution if it does not satisfy the constraints of a problem. Whenever a solution fails we trace back to the failure point, build on the next solution, and continue this process till we find the solution or all possible solutions are looked after.

### **41. In a priority queue, insertion and deletion takes place at**

#### **front, rear end**

#### **only at the rear end**

#### **only at the front end**

#### any position

**Ans.** In a [priority queue](https://www.scholarhat.com/tutorial/datastructures/priority-queue-in-data-structures), insertion takes place at the appropriate position to maintain the heap property, and deletion takes place at the root or the corresponding node.

### **42. O(n) means computing time is**

#### **Constant**

#### **Quadratic**

#### Linear

#### **Cubic**

Ans. O(n) means the computing time grows linearly with the input size n.

### **43. The total number of comparisons in a bubble sort is**

#### n(n-1)/2

#### **2n**

#### **n^2**

#### **n^3**

Ans. The [**bubble sort algorithm**](https://www.scholarhat.com/tutorial/datastructures/bubble-sort-in-data-structures) repeatedly compares the adjacent elements, from left to right, and swaps them if they are out-of-order.

### **44. Which of the following is not an application of binary search?**

#### **To find the lower/upper bound in an ordered sequence**

#### **Union of intervals**

#### **Debugging**

#### To search in an unordered list

**Ans.** Binary Search is a searching algorithm that searches for an element's position in a sorted array only.

### **45. What makes selection sorting different from other sorting techniques?**

#### It requires no additional storage space

#### **It is scalable**

#### **It works best for already-sorted inputs**

#### **It is faster than any other sorting technique**

**Ans.** Selection sort is an in-place comparison sort algorithm. In-place sorting algorithms rearrange the elements within the array that is to be sorted, without using any additional space or memory.

### **46. A linearly ordered sequence of memory cells is known as**

#### node

#### **link**

#### **variable**

#### **null**

### **47. Associative arrays can be implemented using**

#### **B-tree**

#### **A doubly linked list**

#### **A single linked list**

#### A self-balancing binary search tree

**Ans.** Associative arrays can be implemented using self-balancing binary search trees like AVL trees or Red-Black trees.

### **48. What is the worst-case time complexity of binary search using recursion?**

#### O(log n)

#### **O(n)**

#### **O(n^2)**

#### **O(nlogn)**

### **49. What is the advantage of a recursive approach over an iterative approach?**

#### **Consumes less memory**

#### Less code and easy to implement

#### **Consumes more memory**

#### **More code has to be written**

### **50. What is the hash function used in the division method?**

#### **h(k) = k/m**

#### h(k) = k mod m

#### **h(k) = m/k**

#### **h(k) = m mod k**

### **Multiple Choice Questions for Data Structures**

### **51. Minimum number of fields in each node of a doubly linked list is \_\_\_\_**

### **(A) 2 (B) 3 (C) 4 (D) None of the above**

### **Ans: B 3**

### **52. A graph in which all vertices have equal degree is known as \_\_\_\_**

### **(A) Complete graph (B) Regular graph (C) Multi graph (D) Simple graph**

### **Ans: A Complete graph**

### **53. A vertex of in-degree zero in a directed graph is called a/an**

### **(A) Root vertex (B) Isolated vertex (C) Sink (D) Articulation point**

### **Ans: C Sink**

### **54. A graph is a tree if and only if graph is**

### **(A) Directed graph (B) Contains no cycles (C) Planar (D) Completely connected**

### **Ans: B Contains no cycles**

### **55. 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**

### **Ans: C Anywhere the computer has space for them**

### **56. A parentheses checker program would be best implemented using**

### **(A) List (B) Queue (C) Stack (D) Any of the above**

### **Ans: C Stack**

### **57. 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**

### **Ans: B Queue**

### **58. Which of the following data structure is required to convert arithmetic expression in infix to its equivalent postfix notation?**

### **(A) Queue (B) Linked list (C) Binary search tree (D) None of above**

### **Ans: D None of above**

### **59. 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 tree**

### **Ans: B Complete binary tree**

### **60. Which of following data structure is more appropriate for implementing quick sort iteratively?**

### **(A) Deque (B) Queue (C) Stack (D) Priority queue**

### **Ans: C Stack**

### **61. The number of edges in a complete graph of n vertices is**

### **(A) n(n+1)/2 (B) n(n-1)/2 (C) n2 /2 (D) n**

### **Ans: B n(n-1)/2**

### **62. 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**

### **Ans: D Similar trees**

### **63. 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**

### **Ans: C Equivalent trees**

### **64. Finding the location of a given item in a collection of items is called ……**

### **A. Discovering B. Finding C. Searching D. Mining**

### **Ans. C searching**

### **65. The time complexity of quicksort is ……..**

### **A. O(n) B. O(logn) C. O(n2) D. O(n logn)**

### **Ans. D O(n logn)**

### **66. Quick sort is also known as ……..**

### **A. merge sort B. tree sort C. shell sort D. partition and exchange sort**

### **Ans. D partition and exchange sort**

### **67. ………. sorting is good to use when alphabetizing a large list of names.**

### **A. Merge B. Heap C. Radix D. Bubble**

### **Ans. C Radix**

### **68. The total number of comparisons in a bubble sort is ….**

### **A. O(n logn) B. O(2n) C. O(n2) D. O(n)**

### **Ans. A O(n logn)**

### **69. ……… form of access is used to add and remove nodes from a queue.**

### **A. LIFO, Last In First Out B. FIFO, First In First Out C. Both a and b D. None of these**

### **Ans. B FIFO, First In First Out**

### **70. New nodes are added to the ……… of the queue.**

### **A. Front B. Back C. Middle D. Both A and B**

### **Ans. B Back**

### **71. The term push and pop is related to**

### **A. Array B. Lists C. Stacks D. Trees**

### **Ans. C Stacks**

### **72. Which of the following is an application of stack?**

### **A. finding factorial B. tower of Hanoi C. infix to postfix D. all of the above**

### **Ans. D all of the above**

### **73. The operation of processing each element in the list is known as …… A. sorting B. merging C. inserting D. traversal**

### **Ans. D traversal**

### **74. The situation when in a linked list START=NULL is ….**

### **A. Underflow B. Overflow C. Houseful D. Saturated**

### **Ans. A Underflow**

### **75. Which of the following are two-way lists?**

### **A. Grounded header list B. Circular header list C. Linked list with header and trailer nodes D. List traversed in two directions**

### **Ans. D List traversed in two directions**

### **76. Which is the pointer associated with the availability list?**

### **A. FIRST B. AVAIL C. TOP D. REAR**

### **Ans. B AVAIL**

### **77. Which of the following data structure can’t store the non-homogeneous data elements?**

### **A) Arrays B) Records C) Pointers D) Stacks**

### **Ans. A Arrays**

### **78. Which of the following is non-liner data structure?**

### **A) Stacks B) List C) Strings D) Trees Ans. D Trees**

### **79. To represent hierarchical relationship between elements, which data structure is suitable?**

### **A) Dequeue B) Priority C) Tree D) Graph**

### **Ans. C Tree**

### **80. Identify the data structure which allows deletions at both ends of the list but insertion at only one end.**

### **A) Input restricted dequeue B) Output restricted dequeue C) Priority queues D) Stack**

### **Ans. A Input restricted dequeue**

### 81. What is a data structure?

### **a) A programming language b) A collection of algorithms** c) A way to store and organize data **✅ d) A type of computer hardware**

### **82**. What are the disadvantages of arrays?

### a) Index value of an array can be negative b) Elements are sequentially accessed c) Data structure like queue or stack cannot be implemented **d) There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size** ✅

### 83. Which data structure is used for implementing recursion?

### **a) Stack** ✅ b) Queue c) List d) Array

### 84. The data structure required to check whether an expression contains a balanced parenthesis is?

### a) Queue **b) Stack** ✅ c) Tree d) Array

### 85. Which of the following is not the application of stack?

### **a) Data Transfer between two asynchronous processes** ✅ b) Compiler Syntax Analyzer c) Tracking of local variables at run time d) A parentheses balancing program

### 86. Which data structure is needed to convert infix notation to postfix notation?

### a) Tree b) Branch **c) Stack** ✅ d) Queue

### 87. What is the value of the postfix expression 6 3 2 4 + – \*?

### a) 74 **b) -18** ✅ c) 22 d) 40

### 88. What data structure would you most likely see in a non-recursive implementation of a recursive algorithm?

### **a) Stack** ✅ b) Linked List c) Tree d) Queue

### 89. Which of the following statement(s) about stack data structure is/are NOT correct?

### a) Top of the Stack always contains the new node **b) Stack is the FIFO data structure** ✅ c) Null link is present in the last node at the bottom of the stack d) Linked Lists are used for implementing Stacks

### 90. The data structure required for Breadth First Traversal on a graph is?

### a) Array b) Stack c) Tree **d) Queue** ✅

### 91. The prefix form of A - B / (C \* D ^ E) is?

### **a) -A/B\*C^DE** ✅ b) -A/BC\*^DE c) -ABCD\*^DE d) -/\*^ACBDE

### 92. Which of the following points is/are not true about Linked List data structure when compared with an array?

### a) Random access is not allowed in a typical implementation of Linked Lists **b) Access of elements in linked list takes less time than compared to arrays** ✅ c) Arrays have better cache locality that can make them better in terms of performance d) It is easy to insert and delete elements in Linked List

### 93. Which data structure is based on the Last In First Out (LIFO) principle?

### a) Tree b) Linked List **c) Stack** ✅ d) Queue

### 94. Which of the following application makes use of a circular linked list?

### a) Recursive function calls b) Undo operation in a text editor c) Implement Hash Tables **d) Allocating CPU to resources** ✅

### 95. What is a bit array?

### **a) Data structure that compactly stores bits** ✅ b) Data structure for representing arrays of records c) Array in which elements are not present in continuous locations d) An array in which most of the elements have the same value

### 96. Which of the following tree data structures is not a balanced binary tree?

### **a) Splay tree** ✅ b) B-tree c) AVL tree d) Red-black tree

### 97. Which of the following is not the type of queue?

### a) Priority queue b) Circular queue **c) Single ended queue** ✅ d) Ordinary queue

### 98. Which of the following data structures can be used for parentheses matching?

### a) n-ary tree b) Queue c) Priority queue **d) Stack** ✅

### 19. Which algorithm is used in the top tree data structure?

### a) Backtracking **b) Divide and Conquer** ✅ c) Branch d) Greedy

### 90. What is the need for a circular queue?

### a) Easier computations b) Implement LIFO principle in queues **c) Effective usage of memory** ✅ d) To delete elements based on priority

### 100. Which of the following is the most widely used external memory data structure?

### **a) B-tree** ✅ b) Red-black tree c) AVL tree d) Both AVL tree and Red-black tree

### 101. Which of the following is also known as Rope data structure?

### a) Linked List b) Array c) String **d) Cord** ✅

### 102. What will be the output of the following program?

### c

### Copy code

### main()

### {

### char str[] = "san foundry";

### int len = strlen(str);

### int i;

### 

### for(i = 0; i < len; i++)

### push(str[i]); // pushes an element into stack

### 

### for(i = 0; i < len; i++)

### pop(); // pops an element from the stack

### }

### **a) yrdnuof nas** ✅ b) foundry nas c) sanfoundry d) san foundry

### 103. Which of the following data structure can provide efficient searching of the elements?

### a) Binary search tree b) Unordered lists **c) 2-3 tree** ✅ d) Treap

### 104. What is an AVL tree?

### a) A tree which is unbalanced and is a height balanced tree **b) A tree which is balanced and is a height balanced tree** ✅ c) A tree with at most 3 children d) A tree with three children