https://www.sanfoundry.com/1000-data-structure-questions-answers/

https://compsciedu.com/mcq-questions/Data-Structures-and-Algorithms/Linked-Lists

Set 1

This set of MCQ questions on stack and queue in data structure includes objective questions on overview of stack and its implementation. It also includes MCQ questions about algorithms for push and pop, various stack implementation arrays on stack and queue in data structure.

1) …… 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

2) In liked representation of stack ……. holds the elements of the stack.
A. INFO fields
B. TOP fields
C. LINK fields
D. NULL fields

3) …….. form of access is used to add remove nodes from a stack.
A. LIFO
B. FIFO
C. Both A and B
D. None of these

4) In the linked representation of the stack …… behaves as the top pointer variable of stack.
A. Stop pointer
B. Begin pointer
C. Start pointer
D. Avail pointer

5) New nodes are added to the …… of the queue.
A. Front
B. Back
C. Middle
D. Both A and B

6) In linked representation of stack the null pointer of the last node in the list signals …….

A. Beginning of the stack
B. Bottom of the stack
C. Middle of the stack
D. In between some value

7) What happens when you push a new node onto a stack?
A. The new node is placed at the front of the linked list
B. The new node is placed at the back of the linked list
C. The new node is placed at the middle of the linked list
D. No Changes happens

8) A queue is a ……
A. FIFO
B. LIFO
C. FILO
D. LOFI

9) Which of the following name does not relate to stacks?
A. FIFO lists
B. LIFO lists
C. Piles
D. Push down lists

10) The retrieval of items in a stack is …….. operation.
A. push
B. pop
C. retrieval
D. access

11) The term push and pop is related to
A. Array
B. Lists
C. Stacks
D. Trees

12) Which is the pointer associated with the stack?
A. FIRST
B. FRONT
C. TOP
D. REAR

13) The elements are removal from a stack in ……. order.
A. Reverse
B. Hierarchical
C. Alternative
D. Sequential

14) The insertion operation in the stack is called ……
A. insert

B. push
C. pop
D. top

15) …… is the term used to insert an element into stack.
A. Push
B. Pull
C. Pop
D. Pump

16) Stack follows the strategy of ……..
A. LIFO
B. FIFO
C. LRU
D. RANDOM

17) ……. is the term used to delete an element from the stack.
A. Push
B. Pull
C. Pop
D. Pump

18) Deletion operation is done using …… in a queue.
A. front
B. rear
C. top
D. list

19) A pointer variable which contains the location at the top element of the stack is called …..
A. Top
B. Last
C. Final
D. End

20) 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

Answers:

1) B. FIFO, First In First Out
2) A. INFO fields
3) A. LIFO
4) C. Start pointer
5) B. Back
6) B. Bottom of the stack

7) A. The new node is placed at the front of the linked list
8) A. FIFO
9) A. FIFO lists
10) B. pop
11) C. Stacks
12) C. TOP
13) A. Reverse
14) B. push
15) A. Push
16) A. LIFO
17) C. Pop
18) A. front
19) A. Top
20) D. all of the above

Set 2

1) The queue in which the insertion takes place in the first position after of last element is a ……
A. priority
B. dequeue
C. circular
D. linked

2) Before inserting into stack one must check the condition ……
A. Overflow
B. Underflow
C. Maximum elements
D. Existing elements

3) The another name of dequeue is ……
A. divided queue
B. distributed queue
C. double ended queue
D. design queue

4) Before deletion condition into stack …… has to be checked.
A. Overflow
B. Underflow
C. Maximum elements
D. Existing elements

5) In dequeue, insertion and deletion takes place of …….
A. front, rear end
B. only at rear end
C. only at front end
D. both the ends

6) When does Top value of stack change in insertion process?
A. Before insertion
B. After insertion
C. At the time of insertion
D. While checking overflow

7) A queue in which insertion and deletion takes places from any position is called ……
A. circular queue
B. random of queue
C. priority
D. dequeue

8) Deletion in the linked stack takes place by deleting ……..
A. Node pointed by the start process.
B. End of the list
C. Beginning of the list
D. Middle of the list

9) Which of the following name does not relate to stacks?
A. FIFO lists
B. LIFO list
C. piles
D. push-down lists

10) The condition …….. indicate the queue is empty.
A. Front=Null
B. Null=Front
C. Front=Rear
D. Rear=Null

11) Which of the following is not the type of queue?
A. Ordinary queue
B. Special queue
C. Priority queue
D. Circular queue

12) The value of REAR is increased by 1 when …….
A. An element is deleted in a queue
B. An element is traversed in a queue
C. An element is added in a queue
D. An element is merged in a queue

13) The operations that can be done in a circular queue is/are …..
A. Insert from the front end
B. Delete from front end
C. Display queue contents
D. All of the above

14) The term dequeue is the contraction of the name ……..
A. Double ended queue
B. Double sided queue
C. Double headed queue
D. Double address queue

15) The various operations that can be performed on stacks is/are …..
A. Insert an item into the stack
B. Delete an item from the stack
C. Display the contents of the stack
D. All of the above

16) ……. is a collection of elements such that each element has been assigned a processing priority.
A. Priority queue
B. Procedure queue
C. Main queue
D. Interrupt queue

17) The deletion operation in stack is called ……
A. insert
B. push
C. pop
D. top

18) Link fields holds pointers to the ……. element in the linked representation of stack.
A. Neighboring
B. Last
C. First
D. Middle

19) The pointer associated with the stack is ……..
A. front
B. rear
C. top
D. link

20) Reversing a great deal of space for each stack in memory will ……..
A. Decrease the numbers of times overflow may occur
B. Increase the numbers of times overflow may occur
C. Increase the number of times underflow may occur
D. Increase the number of times underflow may occur

Answers:

1) C. circular
2) A. Overflow
3) C. double-ended queue

4) B. Underflow
5) D. both the ends
6) A. Before insertion
7) C. priority
8) A. Node pointed by the start process
9) A. FIFO lists
10) A. Front=Null
11) B. Special queue
12) C. An element is added in a queue
13) D. All of the above
14) A. Double-ended queue
15) D. All of the above
16) A. Priority queue
17) C. pop
18) A. Neighboring
19) C. top
20) A. Decrease the numbers of times overflow may occur

Set 3

1. Which of the following is not the type of queue?
A) Ordinary queue
B) Single-ended queue
C) Circular queue
D) Priority queue

2. The property of a binary tree is
A) The first subset is called the left subtree
B) The second subtree is called right subtree
C) The root cannot contain NULL
D) The right subtree can be empty

3. State true or false.
i) The degree of root node is always zero.
ii) Nodes that are not root and not leaf are called as internal nodes.
A) True, True
B) True, False
C) False, True
D) False, False

4. Any node is the path from the root to the node is called
A) Successor node
B) Ancestor node
C) Internal node
D) None of the above

5. State true of false.
i) A node is a parent if it has successor nodes.
ii) A node is child node if out degree is one.

A) True, True
B) True, False
C) False, True
D) False, False

6. ……. is not an operation performed on linear list
a) Insertion b) Deletion c) Retrieval d) Traversal
A) only a,b and c
B) only a and b
C) All of the above
D) None of the above

7. Which is/are the application(s) of stack
A) Function calls
B) Large number Arithmetic
C) Evaluation of arithmetic expressions
D) All of the above

8. A …… is an acyclic digraph, which has only one node with indegree 0, and other nodes have in-degree 1.
A) Directed tree
B) Undirected tree
C) Dis-joint tree
D) Direction oriented tree

9. ……. Is a directed tree in which out-degree of each node is less than or equal to two.
A) Unary tree
B) Binary tree
C) Trinary tree
D) Both B and C

10. State true or false.
i) An empty tree is also a binary tree.
ii) In strictly binary tree, the out-degree of every node is either o or 2.
A) True, False
B) False, True
C) True, True
D) False, False

11. Which of the following data structures are indexed structures?
A. Linear arrays
B. Linked lists
C. Queue
D. Stack

12. Which of the following data structure store the homogeneous data elements?
A. Arrays
B. Records

C. Pointers
D. Lists

13. When new data are to be inserted into a data structure, but there is not available space; this situation is usually called ….
A. Underflow
B. overflow
C. houseful
D. saturated

14. A data structure where elements can be added or removed at either end but not in the middle is called …
A. linked lists
B. stacks
C. queues
D. dequeue

15. Operations on a data structure may be …..
A. creation
B. destruction
C. selection
D. all of the above

16. The way in which the data item or items are logically related defines …..
A. storage structure
B. data structure
C. data relationship
D. data operation

17. Which of the following are the operations applicable an primitive data structures?
A. create
B. destroy
C. update
D. all of the above

18. The use of pointers to refer elements of a data structure in which elements are logically adjacent is ….
A. pointers
B. linked allocation
C. stack
D. queue

19. Arrays are best data structures
A. for relatively permanent collections of data
B. for the size of the structure and the data in the structure are constantly changing
C. for both of above situation
D. for non of above situation

20. Which of the following statement is false?
A. Arrays are dense lists and static data structure.
B. Data elements in linked list need not be stored in adjacent space in memory
C. Pointers store the next data element of a list.
D. Linked lists are collection of the nodes that contain information part and next pointer.

Answers:

1. B) Single ended queue
2. D) The right ….. empty
3. C) False, True
4. B) Ancestor node
5. B) True, False
6. D) None of the above
7. D) All of the above
8. A) Directed tree
9. B) Binary tree
10. C) True, True
11. A. Linear arrays
12. B. Records
13. B. overflow
14. D. dequeue
15. D. all of the above
16. B. data structure
17. D. all of the above
18. B. linked allocation
19. A. for relatively permanent collections of data
20. C. Pointers store the next data element of a list.

Solved MCQ on Data Structure and Algorithm set-4

This set of MCQ on data structure and algorithm includes solved multiple-choice questions about linear and non-linear types of data structure, array and linear arrays. It also includes objective questions about indexed structures, nodes in a linked list and linear array.

1. Which of the following data structure is non-linear type?
A) Strings
B) Lists
C) Stacks
D) Tree

2. Which of the following data structure is linear type?
A) Array
B) Tree

C) Graphs
D) Hierarchy

3. The logical or mathematical model of a particular organization of data is called a ……
A) Data structure
B) Data arrangement
C) Data configuration
D) Data formation

4. The simplest type of data structure is ……
A) Multidimensional array
B) Linear array
C) Two-dimensional array
D) Three-dimensional array
5. Linear arrays are also called …….
A) Straight line array
B) One-dimensional array
C) Vertical array
D) Horizontal array

6. Arrays are best data structures ……
A) For relatively permanent collections of data.
B) For the size of the structure and the data in the structure are constantly changing
C) For both of above situation
D) For none of the above

7. Which of the following data structures are indexed structures?
A) Linear arrays
B) Linked lists
C) Graphs
D) Trees

8. Each node in a linked list has two pairs of …….. and …….
A) Link field and information field
B) Link field and avail field
C) Avail field and information field
D) Address field and link field

9. A …… does not keep track of address of every element in the list.
A) Stack
B) String
C) Linear array
D) Queue

10. When does top value of the stack changes?
A) Before deletion
B) While checking underflow
C) At the time of deletion
D) After deletion

Answers:

1. Which of the following data structure is non-linear type?
D) Tree

2. Which of the following data structure is linear type?
A) Array

3. The logical or mathematical model of a particular organization of data is called a ……
A) Data structure

4. The simplest type of data structure is ……
B) Linear array

5. Linear arrays are also called …….
B) One-dimensional array

6. Arrays are best data structures ……
A) For relatively permanent collections of data.

7. Which of the following data structures are indexed structures?
A) Linear arrays

8. Each node in a linked list has two pairs of …….. and …….
A) Link field and information field

9. A …… does not keep track of address of every element in the list.
C) Linear array

10. When does top value of the stack changes?
D) After deletion

Set 5

1. Arrays are best data structures
A) for relatively permanent collections of data
B) for the size of the structure and the data in the structure are constantly changing

C) for both of above situation
D) for none of above situation

2. Which of the following data structure is not linear data structure?
A) Arrays
B) Linked lists
C) Both of the above
D) None of the above

3. The disadvantage in using a circular linked list is …….
A) It is possible to get into infinite loop.
B) Last node points to first node.
C) Time consuming
D) Requires more memory space

4. A linear list in which each node has pointers to point to the predecessor and successors nodes is called as ..
A) Singly Linked List
B) Circular Linked List
C) Doubly Linked List
D) Linear Linked List
5. A …….. is a linear list in which insertions and deletions are made to from either end of the structure.
A) circular queue
B) random of queue
C) priority
D) dequeue
6. In a priority queue, insertion and deletion takes place at …….
A) front, rear end
B) only at rear end
C) only at front end
D) any position

7. The time complexity of quick sort is ……..
A) O(n)
B) O(n2)
C) O(n log n)
D) O(log n)
8. Which of the following is an application of stack?
A) finding factorial
B) tower of Hanoi
C) infix to postfix conversion
D) all of the above
9. The data structure which is one ended is ……
A) queue
B) stack

C) tree
D) graph

10. A list which displays the relationship of adjacency between elements is said to be
A) linear
B) non linear
C) linked list
D) trees

Answers:

1. Arrays are best data structures
A) for relatively permanent collections of data

2. Which of the following data structure is not linear data structure?
D) None of the above

3. The disadvantage in using a circular linked list is …….
A) It is possible to get into infinite loop.

4. A linear list in which each node has pointers to point to the predecessor and successors nodes is called as ..
C) Doubly Linked List

5. A …….. is a linear list in which insertions and deletions are made to from either end of the structure.
D) dequeue

6. In a priority queue, insertion and deletion takes place at …….
D) any position

7. The time complexity of quick sort is ……..
C) O(n log n)

8. Which of the following is an application of stack?
D) all of the above

9. The data structure which is one ended is …….
B) stack

10. A list which displays the relationship of adjacency between elements is said to be
A) linear

Set 6

1. …….. is a variable that can hold the address of the variables, structure and functions that are used in the program.

A) Array

B) Pointer

C) Structure

D) None of the above

2. …… is the organization of the data in a computers memory or in a file.

A) Array

B) Data Structure

C) Data Management

D) Data Organization

3. Which of the following is/are the advantages of using an array?

i) Multi huge quantity of data items can be stored.

ii) Arrays saves the memory space

iii) Arrays helps to arrange the data items in particular order.

iv) Data item searching is faster.

A) i, ii and iii only

B) ii, iii and iv only

C) i, iii and iv only

D) All i, ii, iii and iv

4. Some examples of data structures are

i) array

ii) stack

iii) queue

iv) binary tree

v) hybrid tree

A) i, ii, iii and iv only

B) ii, iii, iv and v only

C) i, ii, iii and v only

D) All i, ii, iii, iv and v

Table of Contents

Read Also: Objective Questions on Data Structure and Algorithm

5. Match the following components of data structure based on the concept of Abstract Data Type (ADT) with their definitions.

a) Operations i) Organizations of data implemented in lower level data structure.

b) Storage structures ii) Description on how to manipulate information in the storage structure.

c) Algorithms iii) Specifies the external appearance of data structure.

A) a-i, b-ii, c-iii

B) a-ii, b-iii, c-i

C) a-iii, b-i, c-ii

D) a-i, b-iii, c-ii

6. Match the following properties of an array with their descriptions.

a) Homogeneous i) the list size is constant.

b) Ordered ii) there is a first and last element.

c) Finite iii) there is a next and previous in the natural order of the structure

d) fixed-length iv) every element is the same.

A) a-i, b-ii, c-iii, d-iv

B) a-ii, b-iii, c-iv, d-i

C) a-iii, b-i, c-ii, d-iii

D) a-iv, b-iii, c-ii, d-i

7. Which of the following are linear type of data structure?

i) Linked list

ii) Stack

iii) Binary Tree

iv) Array

v) Queue

A) i, ii, iii and iv only

B) ii, iii, iv and v only

C) i, ii, iv and v only

D) All i, ii, iii, iv and v

8. Which of the following are non linear type of data structure?

i) Tree

ii) Graphs

iii) Hash tables

iv) List

A) i, ii and iii only

B) ii, iii and iv only

C) i, iii and iv only

D) All i, ii, iii and iv

Read Also: Objective questions of computer data structure

9. State whether the following statements is/are True or False.

i) An ancestor is any node in the path from the root to the node.

ii) A sub-tree is any connected structure below the root.

iii) Binary tree is a directed tree in which out degree of each node is less than or equal to one.

iv) A tree consists of finite set of elements called nodes.

v) Nodes that are not root and not leaf are called intermediate nodes.

A) True, True, True, False, True

B) True, False, True, True, False

C) True, True, True, False, False

D) True, True, False, True, False

10. In a binary search tree the node to be deleted will have two cases which are

i) An empty left sub-tree and non empty right sub-tree and vice versa.

ii) Non empty left sub-tree and right sub-tree.

iii) Empty left sub-tree and right sub-tree.

A) i and ii only

B) ii, and iii only

C) i and iii only

D) None of the above

Answers:

1. B) Pointer

2. B) Data Structure

3. D) All i, ii, iii and iv

4. A) i, ii, iii and iv only

5. C) a-iii, b-i, c-ii

6. D) a-iv, b-iii, c-ii, d-i

7. C) i, ii, iv and v only

8. A) i, ii and iii only

9. D) True, True, False, True, False

10. A) i and ii only