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a. floor address

b. foundation address

c. first address

d. base address

2. The memory address of fifth element of an array can be calculated by the formula

a. LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array

b. LOC(Array[5])=Base(Array[5])+(5-lower bound), where w is the number of words per memory cell for the array

c. LOC(Array[5])=Base(Array[4])+(5-Upper bound), where w is the number of words per memory cell for the array

d. None of above

3. Which of the following data structures are indexed structures?

a. linear arrays

b. linked lists

c. both of above

d. none of above

4. Which of the following is not the required condition for binary search algorithm?

a. The list must be sorted

b. there should be the direct access to the middle element in any sublist

c. There must be mechanism to delete and/or insert elements in list

d. none of above

5. Which of the following is not a limitation of binary search algorithm?

a. must use a sorted array

b. requirement of sorted array is expensive when a lot of insertion and deletions are needed

c. there must be a mechanism to access middle element directly

d. binary search algorithm is not efficient when the data elements are more than 1000.

6. Two dimensional arrays are also called

a. tables arrays

b. matrix arrays

c. both of above

d. none of above

7. A variable P is called pointer if

a. P contains the address of an element in DATA.

b. P points to the address of first element in DATA

c. P can store only memory addresses

d. P contain the DATA and the address of DATA

8. Which of the following data structure can't store the non-homogeneous data elements?

a. Arrays

b. Records

c. Pointers

d. None

9. Which of the following data structure store the homogeneous data elements?

a. Arrays

b. Records

c. Pointers

d. None

10. Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called

a. elementary items

b. atoms

c. scalars

d. all of above

11. The difference between linear array and a record is

a. An array is suitable for homogeneous data but hte data items in a record may have different data type

b. In a record, there may not be a natural ordering in opposed to linear array.

c. A record form a hierarchical structure but a lienear array does not

d. All of above

12. 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 adjecent 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

13. Binary search algorithm can not be applied to

a. sorted linked list

b. sorted binary trees

c. sorted linear array

d. pointer array

14. When new data are to be inserted into a data structure, but there is no available space; this situation is usually called

a. underflow

b. overflow

c. housefull

d. saturated

15. The situation when in a linked list START=NULL is

a. underflow

b. overflow

c. housefull

d. saturated

16. Which of the following is two way list?

a. grounded header list

b. circular header list

c. linked list with header and trailer nodes

d. none of above

17. Which of the following name does not relate to stacks?

a. FIFO lists

b. LIFO list

c. Piles

d. Push-down lists

18. The term "push" and "pop" is related to the

a. array

b. lists

c. stacks

d. all of above

19. A data structure where elements can be added or removed at either end but not in the middle

a. Linked lists

b. Stacks

c. Queues

d. Deque

20. When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return

a. FAEKCDBHG

b. FAEKCDHGB

c. EAFKHDCBG

d. FEAKDCHBG

Answers

1. The memory address of the first element of an array is called

d. base address

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a. LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array

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**Set - 1**

1. Two main measures for the efficiency of an algorithm are

a. Processor and memory

b. Complexity and capacity

c. Time and space

d. Data and space

2. The time factor when determining the efficiency of algorithm is measured by

a. Counting microseconds

b. Counting the number of key operations

c. Counting the number of statements

d. Counting the kilobytes of algorithm

3. The space factor when determining the efficiency of algorithm is measured by

a. Counting the maximum memory needed by the algorithm

b. Counting the minimum memory needed by the algorithm

c. Counting the average memory needed by the algorithm

d. Counting the maximum disk space needed by the algorithm

4. Which of the following case does not exist in complexity theory

a. Best case

b. Worst case

c. Average case

d. Null case

5. The Worst case occur in linear search algorithm when

a. Item is somewhere in the middle of the array

b. Item is not in the array at all

c. Item is the last element in the array

d. Item is the last element in the array or is not there at all

6. The Average case occur in linear search algorithm

a. When Item is somewhere in the middle of the array

b. When Item is not in the array at all

c. When Item is the last element in the array

d. When Item is the last element in the array or is not there at all

7. The complexity of the average case of an algorithm is

a. Much more complicated to analyze than that of worst case

b. Much more simpler to analyze than that of worst case

c. Sometimes more complicated and some other times simpler than that of worst case

d. None or above

8. The complexity of linear search algorithm is

a. O(n)

b. O(log n)

c. O(n2)

d. O(n log n)

9. The complexity of Binary search algorithm is

a. O(n)

b. O(log )

c. O(n2)

d. O(n log n)

10. The complexity of Bubble sort algorithm is

a. O(n)

b. O(log n)

c. O(n2)

d. O(n log n)

11. The complexity of merge sort algorithm is

a. O(n)

b. O(log n)

c. O(n2)

d. O(n log n)

12. The indirect change of the values of a variable in one module by another module is called

a. internal change

b. inter-module change

c. side effect

d. side-module update

13. Which of the following data structure is not linear data structure?

a. Arrays

b. Linked lists

c. Both of above

d. None of above

14. Which of the following data structure is linear data structure?

a. Trees

b. Graphs

c. Arrays

d. None of above

15. The operation of processing each element in the list is known as

a. Sorting

b. Merging

c. Inserting

d. Traversal

16. Finding the location of the element with a given value is:

a. Traversal

b. Search

c. Sort

d. None of above

17. 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

18. Linked lists are best suited

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

19. Each array declaration need not give, implicitly or explicitly, the information about

a. the name of array

b. the data type of array

c. the first data from the set to be stored

d. the index set of the array

20. The elements of an array are stored successively in memory cells because

a. by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated

b. the architecture of computer memory does not allow arrays to store other than serially

c. both of above

d. none of above

Answers

1. Two main measures for the efficiency of an algorithm are

c. Time and space

2. The time factor when determining the efficiency of algorithm is measured by

b. Counting the number of key operations

3. The space factor when determining the efficiency of algorithm is measured by

a. Counting the maximum memory needed by the algorithm

4. Which of the following case does not exist in complexity theory

d. Null case

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