1.The inorder traversal of tree will yield a sorted listing of elements of tree in

A.Binary trees

B.Binary search trees

C.Heaps

D.None of the above

Answer: B

2.Consider that N elements are to be sorted.What is the worst case time complexity of bubble sort?

A.O(1)

B.O(log 2N)

C.O(N)

D.O(N^2)

Answer: D

3.In a Max-heap, element with the greater key is always in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ node

A.leaf

B.root

C.first node of left sub tree

D.first node of right sub tree

Answer: B

4.The two measures of efficiency of an algorithm are

A.Processor and memory

B.complexity and capacity

C.time and space

D.data and space

Answer: C

5.Depth First Search graph traversal method makes use of \_\_\_\_\_\_\_\_\_\_\_data structure

A.stack

B.queue

C.linked list

D.tree

Answer: D

6.Complexity of merge sort algorithm is

A.O(N)

B.O(log N)

C.O(N^2)

D.O(N log N)

Answer: D

7.In case of Binary tree which of the following traversal method gives sorted output?

A.Preorder

B.Postorder

C.Inorder

D.none of these

Answer: C

8.In a sorted singly linked list with N nodes, the time taken to insert an element to appropriate place is

A.O(1)

B.O(log N)

C.O(N)

D.O(N log N)

Answer: C

9.The number of swapping needed to sort the numbers 8, 22, 7, 9, 31, 19, 5, 13 in ascending order, using bubble sort is

A.11

B.12

C.13

D.14

Answer:

10.Which of the following sorting algorithms does not have a worst case time complexity of O(N^2)

A.Insertion sort

B.Merge sort

C.Quick sort

D.Bubble sort

Answer: B

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

A.Linked lists

B.Stacks

C.Queues

D.Deque(Double Ended Queue)

Answer: D

12.Which of the following are true about divide and conquer algorithm?

A.Divide and conquer algorithm design paradigm is based on multi-branched recursion

B.A divides and conquer algorithm works by recursively breaking down a problem into a two or more sub-problems of the same type

C.Quick sort and merge sort use divide and conquer

D.All of the above

Answer: D

13.In polynomial manipulation, nodes consists of three field

A.Coefficient, exponential and link

B.previous item link, data item, next item link

C.Coefficient, data item and link

D.none of the above

Answer: C

14.If you began with an empty AVL tree, and then inserted the following keys into the tree in the following order:

20, 40, 15, 25, 30, 80, 75, 95, 35, 90

which key would be in the root of the tree after inserting all the keys

A.75

B.40

C.35

D.30

Answer:

15.How many singly linked lists are used to represent a graph with n nodes and edges,when using an edge list representation?

A.m

B.n

C.m + n

D.m \* n

Answer:

16.The time complexity of a right skewed binary search tree with n elements is

A.O(n)

B.Equal to the time complexity in searching an element linearly in a list of n elements

C.Worst case complexity for a binary search tree

D.All of the above

Answer:

17.Suppose you have a directed graph representing all the flights that an airline flies.What algorithm might be used to find the best sequence of connections from one city to another?

A.Breadth first search

B.Depth first search

C.A cycle-finding algorithm

D.A shortest-path algorithm

Answer:

18.The searching technique that takes O(1) time to find a data is

A.Linear search

B.Binary search

C.Hashing

D.Tree search

Answer:

19.A mathematical-model with a collection of operations defined on that model is called

A.Data structure

B.Abstract data type

C.primitive data type

D.algorithm

Answer:

20.A full binary tree with n non-leaf nodes contains

A.log N nodes

B.N + 1 nodes

C.2N - 1 nodes

D.2N + 1 nodes

Answer:

21. The concept of order (Big 0) is important because

A.It can be used to decide the best algorithm that solves a given problem

B.It determines the maximum size of a problem that can be solved in a given amount of time

C.It is the lower bound of the growth rate of algorithms

D.both A and B

Answer: D

1:

which of the following is not a limitation of binary search

A must use a sorted array

B requirement of sorted array is expensive when lot of insertion and deletion is needed

C there must be a mechanism to access middle element

D binary search algorithm is not efficient when data is more then 1000

2:

which of the following statement is false ?

A array are dense list and static data structure

B data element in linked list need not be stored in adjacent space

C pointers store the data of the next node in a linked list

D linked list are collection of the nodes that contains information

of pointers

3:

if node N is a terminal node in a binary tree then its

A right tree is empty

B left tree is empty

C both left and right sub tree are empty

D root node is empty

4:

which of the following data structure is non-linear type ?

A String

B list

C stack

D none

ans : D

5:

if G is a directed graph with 20 vertices , how many boolean value will be needed to represent G using a adjacey matrix ?

A 20

B 40

C 200

D 400

ans : D

6:

in what kind of data structure we can easily perform insert,delete , concentrate and rearrangment of the element ?

A linked list

B tree

C graph

D array

7:

unconnected graph without cycles is called as

A tree

B forest

C complete graph

D none

ans : c

8:

to evaluate an expression without any embedded function calls \_

A one stack is enough

B two stack are needed

C many stack are needed

D a turning machine is needed in general case

ans : A

9:

which of the following statement is true ?

I as the number of entries in hash table increase , the number of collision increases

II recursive program are efficient

III the worst case complexity of quicksort

IV binary search using a linear linked list is efficient

A I AND II

B II AND III

C I AND IV

D I AND III

ans D