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CSE A

**Data Structures**

**Module 2**

1)Any node is the path from the root to the node is called

A Ancestor node

B Successor node

C Internal node

D None of the above

Ans: A

2)A graph is a collection of nodes, called ...... And line segments called arcs or ...... that connect pair of nodes.

A vertices, paths

B vertices, edges

C graph node, edges

D edges, vertices

Ans: B

3)Which of the following data structure can’t store the nonhomogeneous data elements?

A Arrays

B Stacks

C Records

D None of the above

Ans: A

4)...... is a pile in which items are added at one end and removed from the other.

A List

B Queue

C Stack

D Array

Ans: B

5)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 mentioned

Ans:D

6) Given pointer to a node X in a singly linked list. Only one pointer is given, pointer to head node is not given, can we delete the node X from given linked list?

A. Possible if X is not last node  
B. Possible if size of linked list is even  
C. Possible if size of linked list is odd  
D. Possible if X is not first node

Ans: A

7) 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

Ans: C

8)What would be the asymptotic time complexity to find an element in the linked list?

A O(1)  
B O(n)  
C O(n2)  
D None of the mentioned

Ans: B

9) The concatenation of two list can performed in O(1) time. Which of the following variation of linked list can be used?

A. Singly linked list  
B. Doubly linked list  
C. Circular doubly linked list  
D. Array implementation of list

Ans: C

10) What kind of linked list is best to answer question 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

Ans: D

11) Linked lists are not suitable to for the implementation of?

A. Insertion sort  
B. Radix sort  
C. Polynomial manipulation  
D. Binary search

Ans: D

12) Linked list is considered as an example of \_\_\_\_\_\_\_\_\_\_\_ type of memory allocation.

A. Dynamic  
B. Static  
C. Compile time  
D. None of the mentioned

Ans: A

13) In Linked List implementation, a node carries information regarding

A. Data  
B. Link  
C. Data and Link  
D. None of the mentioned

Ans: B

14) Linked list data structure offers considerable saving in

A. Computational Time   
B. Space Utilization   
C. Space Utilization and Computational Time   
D. None of the mentioned

Ans: C

15) What does the following function do for a given Linked List with first node as head?

void fun1(struct node\* head)

{

if(head == NULL)

return;

fun1(head->next);

printf("%d ", head->data);

}

A. Prints all nodes of linked lists  
B. Prints all nodes of linked list in reverse order  
C. Prints alternate nodes of Linked List  
D. Prints alternate nodes in reverse order

Ans: B

16) 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 of these

Ans: A

17) Which of these is an application of linked lists?

A. To implement file systems  
B. For separate chaining in hash-tables  
C. To implement non-binary trees  
D. All of the mentioned

Ans: D

18) 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)

Ans: C

19) What is the output of following function for start pointing to first node of following linked list? 1->2->3->4->5->6

void fun(struct node\* start)

{

if(start == NULL)

return;

printf("%d ", start->data);

if(start->next != NULL )

fun(start->next->next);

printf("%d ", start->data);

}

A. 1 4 6 6 4 1  
B. 1 3 5 1 3 5  
C. 1 2 3 5  
D. 1 3 5 5 3 1

Ans: D

20) In the worst case, the number of comparisons needed to search a singly linked list of length n for a given element is

A. log 2 n  
B. n/2  
C. log 2 n – 1  
D. n

Ans: D

**Module 1**

1)\_\_\_ is the method of expressing the upper bound of an algorithm’s running time.

A big O

B upper bound

C little inidian

D all of the above

Ans: A

2) Which of the problems cannot be solved by backtracking method?  
a) n-queen problem  
b) subset sum problem  
c) hamiltonian circuit problem  
d) travelling salesman problem

Ans: D

3)steps of refinement is called

A top down

B bottom up

C big O

D stepwise refinement method

Ans: D

4)OOP follows -------

A top down

B bottom up

C all of the above

D none of the above

Ans: B

5)modular method follows

A top down

B bottom up

C both A and B

D none

Ans: C

6)choice of a particular algorithm depends on

A space complexity

B time complexity

C both A,B

D none

Ans: C

7)space needed by a program consist of

A data space

B variable space

C memory space

D all of the above

Ans: A

8)----- is used to analyse a program

A freaquency count

B wavelength count

C time compleixity

D space complexity

Ans: A

9)big O means

A f(n) is big O of g(n)

B g(n) < f(n)

C f(n) is not in g(n)

D f(n) > g(n)

Ans: A

10)best case of quick sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans : A

11) worst case of quick sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans: C

12) best case of merge sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans: A

13) worst case of mrege sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans: A

14)best , worst and average cases of ----are equal

A merge sort

B quick sort

C linear search

D binary search

Ans: A

15) best case of binary search

A O(n log n)

B O(n)

C O(n2)

D O(1)

Ans: D

16) worst case of insertion sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans: C

17)who has O(log n) as worst case

A linear search

B binary search

D insertion sort

E selection sort

Ans: B

18)reusability is used in

A structured

B oop

C procedurual

D modular

Ans: C

19)program is decomposed into modules in-----

A structured

B oop

C procedurual

D modular

Ans: D

20) worst case of selection sort

A O(n log n)

B O(n)

C O(n2)

D O(n3)

Ans: C