

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E/CSE	Year / Semester :II/III	Format No.	NAC/TLP-07a.13
Subject Code :CS8391	Subject Name :Data Structures	Rev. No.	02
Unit No :1	Unit Name :Linear Data Structures - List	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	In doubly linked lists a) a pointer is maintained to store both next and previous nodes. b) two pointers are maintained to store next and previous nodes. c) a pointer to self is maintained for each node. d) none of the above.	L2
2.	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	L2
3.	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) Unordered list	L4
4.	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	L5
5.	Consider the following definition in c programming language <pre style="background-color: #f0f0f0; padding: 10px;"> struct node { int data; struct node * next; } typedef struct node NODE; NODE *ptr; </pre> Which of the following c code is used to create new node? a) ptr = (NODE*)malloc(sizeof(NODE)); b) ptr = (NODE*)malloc(NODE); c) ptr = (NODE*)malloc(sizeof(NODE*)); d) ptr = (NODE)malloc(sizeof(NODE));	L1
6.	Consider an implementation of unsorted singly linked list. Suppose it has its representation with a head pointer only. Given the representation, which of the following operation can be implemented in O(1) time? i) Insertion at the front of the linked list ii) Insertion at the end of the linked list iii) Deletion of the front node of the linked list iv) Deletion of the last node of the linked list a) I and II	L3

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	<p>b) I and III c) I, II and III d) I, II and IV</p>	
7.	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	L2
8.	Linked lists are not suitable to for the implementation of? a) Insertion sort b) Radix sort c) Polynomial manipulation d) Binary search	L1
9.	Linked list is considered as an example of _____ type of memory allocation. a) Dynamic b) Static c) Compile time d) Heap	L2
10.	In Linked List implementation, a node carries information regarding _____ a) Data b) Link c) Data and Link d) Node	L1
11.	Linked list data structure offers considerable saving in _____ a) Computational Time b) Space Utilization c) Space Utilization and Computational Time d) Speed Utilization	L3
12.	Which of the following points is/are not 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) Access of elements in linked list takes less time than compared to arrays	L4
13.	What does the following function do for a given Linked List with first node as head? <pre style="background-color: #f0f0f0; padding: 10px;"> void fun1(struct node* head) { if(head == NULL) return; fun1(head->next); printf("%d ", head->data); } </pre> 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	L5

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14.		<p>What is the output of following function for start pointing to first node of following linked list?</p> <pre style="background-color: #f0f0f0; padding: 5px;"> 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); } </pre> <p>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</p>	L3
15.		<p>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?</p> <p>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</p>	L4
16.		<p>You are given pointers to first and last nodes of a singly linked list, which of the following operations are dependent on the length of the linked list?</p> <p>a) Delete the first element b) Insert a new element as a first element c) Delete the last element of the list d) Add a new element at the end of the list</p>	L2
17.		<p>What is the time complexity to count the number of elements in the linked list?</p> <p>a) O(1) b) O(n) c) O(logn) d) O(n²)</p>	L1
18.		<p>Which of the following is false about a doubly linked list?</p> <p>a) We can navigate in both the directions b) It requires more space than a singly linked list c) The insertion and deletion of a node take a bit longer d) Implementing a doubly linked list is easier than singly linked list</p>	L1
19.		<p>Which of these is not an application of linked list?</p> <p>a) To implement file systems b) For separate chaining in hash-tables c) To implement non-binary trees d) Random Access of elements</p>	L2
20.		<p>What is a memory efficient double linked list?</p> <p>a) Each node has only one pointer to traverse the list back and forth b) The list has breakpoints for faster traversal c) An auxiliary singly linked list acts as a helper list to traverse through the doubly linked list</p>	L2

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	d) A doubly linked list that uses bitwise AND operator for storing addresses	
21.	How do you calculate the pointer difference in a memory efficient double linked list? a) head xor tail b) pointer to previous node xor pointer to next node c) pointer to previous node – pointer to next node d) pointer to next node – pointer to previous node	L3
22.	What differentiates a circular linked list from a normal linked list? a) You cannot have the ‘next’ pointer point to null in a circular linked list b) It is faster to traverse the circular linked list c) You may or may not have the ‘next’ pointer point to null in a circular linked list d) Head node is known in circular linked list	L3
23.	Which of the following application makes use of a circular linked list? a) Undo operation in a text editor b) Recursive function calls c) Allocating CPU to resources d) Implement Hash Tables	L2
24.	Which of the following is false about a circular linked list? a) Every node has a successor b) Time complexity of inserting a new node at the head of the list is O(1) c) Time complexity for deleting the last node is O(n) d) We can traverse the whole circular linked list by starting from any point	L4
25.	Consider a small circular linked list. How to detect the presence of cycles in this list effectively? a) Keep one node as head and traverse another temp node till the end to check if its ‘next points to head b) Have fast and slow pointers with the fast pointer advancing two nodes at a time and slow pointer advancing by one node at a time c) Cannot determine, you have to pre-define if the list contains cycles d) Circular linked list itself represents a cycle. So no new cycles cannot be generated	L5
26.	_____ pointers are used to traverse a doubly linked list. a)1 b)2 c)3 d)4	L1
27.	Linked list nodes are normally stored contiguously in memory. a)True b)False	L1
28.	Creating and maintaining dynamic data structures requires dynamic memory allocation—the ability for a program to obtain more memory space at execution time to hold new nodes, and to release space no longer needed. a)True b)False	L1
29.	The following statement evaluates sizeof(struct node) to determine the size in bytes of a structure of type struct node, allocates sizeof(struct node) bytes in memory and stores a pointer to the allocated memory in variable newPtr. newPtr = malloc(sizeof(struct node)); a)True b)False	L3

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30.	<p>A linked list is a linear collection of self-referential structures, called nodes, connected by pointer links—hence, the term "linked"</p> <p>a)True b)False</p>	L1
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