S#	Question IMCA CA-3.3 Data Structures (254303)	ANS
1	A list which displays the relationship of adjacency between elements is said to be_____. A) Linear B) Non-Linear C) Linked-List D) Trees	**A**
2	The data structure which is one ended is……. A) Queue B) Stack C) Tree D) Graph	**B**
3	Which of the following is an application of stack? A) finding factorial B) tower of Hanoi C) infix to postfix conversion D) All the above	**D**
4	The time complexity of quick sort is …….. A) O(n) B) O(n2) C) O(n log n) D) O(log n)	**C**
5	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	**D**
6	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	**C**
7	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	**C**
8	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	**A**
9	Which of the following data structure is connected data structure? A) Graph B) Linked lists C) Both of the above D) None of the above	**C**
10.	Graph is collection of……. And ……. A) Vertex and Edge B) Vertices and Edges C) Nodes,Links D) none of above	**B**

11	When does top value of the stack not changes? A) On Peep B) On Push C) On Pop D) None	**A**
12	…… keep track of address of first element in the link list. A) Start B) End C) Address D) None	**A**
13	Each node in a doubly linked list has two pairs of pointers …….. and ……. A) Next field and information field B) Next field and avail field C) Avail field and information field D) Next field and Prev field	**D**
14	Which of the following data structures are not indexed structures? A) Linear arrays B) Stack C) Queue D) Trees	**D**
15	The DS in which element can be inserted/deleted at only one end is called_____. A) Stack. B) Queue C) Array D) None of the above	**A**
16	Linear arrays are also called ……. A) Straight line array B) One-dimensional array C) Vertical array D) Horizontal array	
17	The complex type of data structure is …… A) Array B) Complex array C) Two dimensional array D) Three dimensional array	**D**
18	The organization of data in a logical orderis called a …… A) Data structure B) Sorting C) Merging D) Searching	**B**
19	Which of the following data structure is/are non-linear type? A) Tree B) Graphs C) Hierarchy D) All the above	**D**
20	Which of the following data structure is/are linear type? A) Strings B) Lists C) Stacks D) All the above	**D**
21	When does top value of the stack changes? A) Before deletion B) While checking underflow C) At the time of deletion D) After deletion	**D**

22	A …… does not keep track of address of every element in the list. A) Stack B) String C) Linear array D) Queue	**C**
23	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	**A**
24	Which of the following data structures are indexed structures? A) Linear arrays B) Linked lists C) Graphs D) Trees	**A**
25	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	**A**
26	Linear arrays are also called ……. A) Straight line array B) One-dimensional array C) Vertical array D) Horizontal array	**B**
27	The simplest type of data structure is …… A) Multidimensional array B) Linear array C) Two dimensional array D) Three dimensional array	**B**
28	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	**A**
29	Which of the following data structure is linear type? A) Array B) Tree C) Graphs D) Hierarchy	**A**
30	Which of the following data structure is non-linear type? A) Strings B) Lists C) Stacks D) Tree	**D**
31	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 adjacentspace in memory C. Pointers store the next data element of a list. D. Linked lists are collection of the nodes that containinformation part and next pointer	**C**
32	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 areconstantly changing C. for both of above situation D. for none of above situation	**A**

33	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	**B**
34	Which of the following are the operations applicable an primitive data structures? A. create B. destroy C. update D. all of the above	**D**
35	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	**B**
36	Operations on a data structure may be ….. A. creation B. destruction C. selection D. all of the above	**D**
37	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	**D**
38	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	**B**
39	Which of the following data structure store the homogeneous data elements? A. Arrays B. Records C. Pointers D. Lists	**B**
40	Which of the following data structures are indexed structures? A. Linear arrays B. Linked lists C. Queue D. Stack	**A**
41	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 oor 2. A) True, False B) False, True C) True, True D) False, False	**C**
42	……. Is a directed tree in which outdegree of each node is less than or equal to two. A) Unary tree B) Binary tree C) Trinary tree D) Both B and C	**B**

43	A …… is an acyclic digraph, which has only one node with indegree 0, and other nodes have indegree 1. A) Directed tree B) Undirected tree C) Dis-joint tree D) Direction oriented tree	**A**
44	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	**D**
45	……. 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	**D**
46	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	**B**
47	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	**C**
48	The property of binary tree is A) The first subset is called left subtree B) The second subtree is called right subtree C) The root cannot contain NULL D) The right subtree can be empty	**D**
49	Which of the following is not the type of queue? A) Ordinary queue B) Single ended queue C) Circular queue D) Priority queue	**B**
50	In general, the binary search method needs no more than ……. comparisons. A) [log2n]-1 B) [logn]+1 C) [log2n] D) [log2n]+1	**D**
51	A …….. is a graph that has weights of costs associated with its edges. A) Network B) Weighted graph C) Both A and B D) None A and B	**C**
52	A graph is a collection of nodes, called ……. And line segments called arcs or …….. that connect pair of nodes.	**A**

	A) vertices, edges B) edges, vertices C) vertices, paths D) graph node, edges	
53	…… is not the operation that can be performed on queue. A) Insertion B) Deletion C) Retrieval D) Traversal	**D**
54	What will be the value of top, if there is a size of stack STACK_SIZE is 5 A) 5 B) 6 C) 4 D) None	**C**
55	The advantage of …….. is that they solve the problem if sequential storage representation. But disadvantage in that is they are sequential lists. A) Lists B) Linked Lists C) Trees D) Queues	**B**
56	Which of the following statement is true? i) Using singly linked lists and circular list, it is not possible totraverse the list backwards. ii) To find the predecessor, it is required to traverse the list fromthe first node in case of singly linked list. A) i-only B) ii-only C) Both i and ii D) None of both	**C**
57	In a circular queue the value of r will be .. A) r=r+1 B) r=(r+1)% [QUEUE_SIZE – 1] C) r=(r+1)% QUEUE_SIZE D) r=(r-1)% QUEUE_SIZE	**C**
58	In a queue, the initial values of front pointer f rare pointer r should be …….. and …….. respectively. A) 0 and 1 B) 0 and -1 C) -1 and 0 D) 1 and 0	**B**
59	A graph is said to be …… if the vertices can be split into two sets V1 and V2 such there are no edges between two vertices of V1 or two vertices of V2. A) Partite B) Bipartite C) Rooted D) Bisects	**B**
60	State True or False. i) An undirected graph which contains no cycles is called forest. ii) A graph is said to be complete if there is an edge betweenevery pair of vertices. A) True, True B) False, True C) False, False D) True, False	**A**
61	Which of the following is not the internal sort? A) Insertion Sort B) Bubble Sort	**C**

	C) Merge Sort D) Heap Sort	
62	State True or False. i) Binary search is used for searching in a sorted array. ii) The time complexity of binary search is O(logn). A) True, False B) False, True C) False, False D) True, True	**D**
63	In ……, search start at the beginning of the list and check every element in the list. A) Linear search B) Binary search C) Hash Search D) Binary Tree search	**A**
64	The number of comparisons done by sequential search is …… A) (N/2)+1 B) (N+1)/2 C) (N-1)/2 D) (N+2)/2	**B**
65	State True of False. i) Network is a graph that has weights or costs associated with it. ii) An undirected graph which contains no cycles is called a forest. iii) A graph is said to be complete if there is no edge between every pair of vertices. A) True, False, True B) True, True, False C) True, True, True D) False, True, True	**B**
66	A directed graph is ……. if there is a path from each vertex to every other vertex in the digraph. A) Weakly connected B) Strongly Connected C) Tightly Connected D) Linearly Connected	**B**
67	To represent hierarchical relationship between elements, Which data structure is suitable? A) Dequeue B) Priority C) Tree D) Graph	**C**
68	19. Which of the following data structure is linear type? A) Graph B) Trees C) Binary tree D) Stack	**D**
69	Which of the following data structure is non linear type? A) Strings B) Lists C) Stacks D) Graph	**D**
70	Identify the data structure which allows deletions at both ends of the list but insertion at only one end. A) Input restricted dequeue B) Output restricted qequeue C) Priority queues	**A**

	D) Stack	
71	Which data structure is used in breadth first search of a graph to hold nodes? A) Stack B) queue C) Tree D) Array	**B**
72	Herder node is used as sentinel in ….. A) Graphs B) Stacks C) Binary tree D) Queues	**C**
73	Which of the following is non-liner data structure? A) Stacks B) List C) Strings D) Trees	**D**
74	A ……. is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out. A) Queue linked list B) Stacks linked list C) Both of them D) Neither of them	**A**
75	Which of the following data structure can't store the non-homogeneous data elements? A) Arrays B) Records C) Pointers D) Stacks	**A**
76	Which data structure allows deleting data elements from and inserting at rear? A) Stacks B) Queues C) Dequeues D) Binary search tree	**B**
77	…… is very useful in situation when data have to stored and then retrieved in reverse order. A) Stack B) Queue C) List D) Link list	**A**
78	……. Is a pile in which items are added at one end and removed from the other. A) Stack B) Queue C) List D) None of the above	**B**
79	Inserting an item into the stack when stack is not full is called ……. Operation and deletion of item form the stack, when stack is not empty is called ……..operation. A) push, pop B) pop, push C) insert, delete D) delete, insert	**A**
80	Which of the following is not the part of ADT description? A) Data B) Operations C) Both of the above D) None of the above	**D**

81	…… is not the component of data structure. A) Operations B) Storage Structures C) Algorithms D) None of above	**D**
82	Which of the following is true about the characteristics of abstract data types? i) It exports a type. ii) It exports a set of operations A) True, False B) False, True C) True, True D) False, False	**C**
83	Stack is also called as A) Last in first out B) First in last out C) Last in last out D) First in first out	**A**
84	…….. level is where the model becomes compatible executable code A) Abstract level B) Application level C) Implementation level D) All of the above	**C**
85	A binary search tree whose left subtree and right subtree differ in hight by at most 1 unit is called …… A) Lemma Tree B) AVL Tree C) Red-Black Tree D) None of the Above	**B**
86	Which if the following is/are the levels of implementation of data structure? A) Abstract level B) Application level C) Implementation level D) All of the above	**D**
87	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 above45.	**B**
88	Match the following. a) Completeness i) How long does it take to find a solution b) Time Complexity ii) How much memory need to perform the search. c) Space Complexity iii) Is the strategy guaranteed to find the solution when there in one. A) a-iii, b-ii, c-i B) a-i, b-ii, c-iii C) a-iii, b-i, c-ii D) a-i, b-iii, c-ii	**C**
89	In the …….. traversal we process all of a vertex's descendants before we move to an adjacent vertex. A) Depth First B) Breadth First C) With First D) Depth Limited	**A**
90	There is an extra element at the head of the list called a ……. A) Antennal	**B**

	B) Sentinel C) List header D) List head	
91	The data structure which is both ended is……. A) Queue B) Stack C) Tree D) Graph	**A**
92	The operation of finding location of element in data structure is _____. A) Traversing B) Searching C) Sorting D) Insertion	**B**
93	The operation of inserting new element in data structure is _____. A) Traversing B) Searching C) Sorting D) Insertion	**D**
94	The operation of deleting an existing element in data structure is _____. A) Traversing B) Searching C) Deletion D) Insertion	**B**
95	The operation of combining more than one data structures in one data structure is _____. A) Traversing B) Searching C) Sorting D) Merging	**D**
96	The operation of visiting each element in data structure once is _____. A) Traversing B) Searching C) Sorting D) Insertion	**A**
97	Which Algo. Is used to find Minimum Spanning Tree from given graph? A) Prims B) Kruskal C) Both A & B D) None of the above	**C**
98	Which of the following is not a type of Queue? A) Priority Queue B) Ordinary Queue C) Double Ended Queue D) Circular Queue	**B**
99	Tree begins at…… A) Root Node B) Leaf Node C) Both A & B D) None	**A**
100	AVL tree is also called as …… A) Traversal Tree B) BST C) Height Balanced Tree D) None	**C**