Program: BE Information Technology Engineering

Curriculum Scheme: Revised 2012

Examination: Second Year Semester III

Course Code: SEITC302 **Course Name: Data Structure & Algorithm Analysis**
Time: 1 hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	Which data structure allows deleting data elements from front and inserting at rear?
Option A:	Stacks
Option B:	Queues
Option C:	Array
Option D:	Binary search tree
Q2.	The operation of processing each element in the list is known as____
Option A:	Sorting
Option B:	Merging
Option C:	Inserting
Option D:	Traversal
Q3.	What is Linked Implementation?
Option A:	Values are stored in adjacent memory cells
Option B:	Values are not necessarily stored in adjacent memory cells and are accessed using pointers
Option C:	Values are not stored in adjacent memory cells
Option D:	None of the mentioned
Q4.	What do you call the selected keys in the quick sort method?
Option A:	Outer key
Option B:	Inner Key
Option C:	Partition key
Option D:	Pivot key
Q5.	To represent hierarchical relationship between elements, which data structure is suitable?
Option A:	Deque
Option B:	Priority
Option C:	Tree
Option D:	All of above
Q6.	……. is very useful in situation when data have to stored and then retrieved in reverse

	order.
Option A:	Stack
Option B:	Queue
Option C:	List
Option D:	Link list
Q7.	Which of the following data structure is non-linear type
Option A:	Queue
Option B:	Linked Lists
Option C:	Stacks
Option D:	None of above
Q8.	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.
Option A:	Queue
Option B:	Stack
Option C:	Both of them
Option D:	Neither of them
Q9.	…… method is not used in sorting of elements.
Option A:	Insertion
Option B:	Deletion
Option C:	Selection
Option D:	Exchange
Q10.	…….. can be find using Kruskal or Prim's algorithm.
Option A:	Spanning Tree
Option B:	Minimum Spanning Tree
Option C:	Maximum Spanning Tree
Option D:	Shortest Path
Q11.	How many nodes does a complete binary tree of level 5 have?
Option A:	15
Option B:	16
Option C:	31
Option D:	32
Q12.	A directed graph is ……. if there is a path from each vertex to every other vertex in the digraph.
Option A:	Weakly connected
Option B:	Strongly Connected
Option C:	Tightly Connected
Option D:	Linearly Connected
Q13.	Stack is also called as
Option A:	Last in first out
Option B:	Last in last out
Option C:	First in first out

Option D:	None of above
Q14.	Which of the following sorting algorithm is of divide-and-conquer type?
Option A:	Bubble sort
Option B:	Insertion sort
Option C:	Quick sort
Option D:	All of above
Q15.	Inserting an item into the stack when stack is not full is called ……
Option A:	PUSH
Option B:	POP
Option C:	INSERT
Option D:	DELETE
Q16.	The statement, head->Link->Link->Link = NULL terminates a linked list after its _____ node.
Option A:	2^{ND}
Option B:	3^{RD}
Option C:	4^{TH}
Option D:	5^{TH}
Q17.	To obtain a prefix expression, which of the tree traversals is used?
Option A:	In-order traversal
Option B:	Pre-order traversal
Option C:	Post-order traversal
Option D:	Level-order traversal
Q18.	Which of the following is false about a binary search tree?
Option A:	The left child is always lesser than its parent
Option B:	The right child is always greater than its parent
Option C:	The left and right sub-trees should also be binary search trees
Option D:	None of the above
Q19.	The Worst case occur in linear search algorithm when,
Option A:	Item is somewhere in the middle of the array
Option B:	Item is not in the array at all
Option C:	Item is the last element in the array
Option D:	Item is the last element in the array or is not there at all
Q20.	In a max-heap, element with the greatest key is always in the which node?
Option A:	Leaf node
Option B:	First node of left sub tree
Option C:	Root node
Option D:	First node of right sub tree
Q21.	The minimum number of fields with each node of doubly linked list is
Option A:	1
Option B:	2
Option C:	3
Option D:	4

Q22.	The given array is arr = {1,2,4,3}. Bubble sort is used to sort the array elements. How many iterations will be done to sort the array?
Option A:	0
Option B:	1
Option C:	2
Option D:	4
Q23.	What is an internal sorting algorithm?
Option A:	Algorithm that uses tape or disk during the sort
Option B:	Algorithm that uses main memory during the sort
Option C:	Algorithm that involves swapping
Option D:	Algorithm that are considered ‘in place’
Q24.	Consider the following operation performed on a stack of size 5. Push(1); Pop(); Push(2); Push(3); Pop(); Push(4); Pop(); Pop(); Push(5); After the completion of all operation, the number of elements present in stack are
Option A:	1
Option B:	2
Option C:	3
Option D:	5
Q25.	Which Tree traversal in case Binary Search Tree yields sorted output?
Option A:	In-Order traversal
Option B:	Pre-Order traversal
Option C:	Post-Order traversal
Option D:	None