

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name : Data Structure Using C

Subject Code : 4CS04DSC1

Branch: M.Sc. C.A. & I.T. (Integrated)

Semester : 4

Date : 22/04/2019

Time : 02:30 To 05:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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Q-1 Attempt the following questions:

(14)

- 1 Which of these best describes an array?
 - a) A data structure that shows a hierarchical behavior
 - b) Container of objects of similar types
 - c) Container of objects of mixed types
 - d) All of the mentioned
- 2 A queue is a ?
 - a) FIFO (First In First Out) list
 - b) LIFO (Last In First Out) list
 - c) Ordered array
 - d) Linear tree
- 3 Which of the following is not the type of queue?
 - a) Ordinary queue
 - b) Single ended queue
 - c) Circular queue
 - d) Priority queue
- 4 The data structure required for Breadth First Traversal on a graph is?
 - a) Stack
 - b) Array
 - c) Queue
 - d) Tree
- 5 Process of inserting an element in stack is called _____
 - a) Create
 - b) Push
 - c) Evaluation
 - d) Pop
- 6 In a stack, if a user tries to remove an element from empty stack it is called _____
 - a) Underflow
 - b) Empty collection



- c) Overflow
- d) Garbage Collection
- 7 In Breadth First Search of Graph, which of the following data structure is used?
 - a) Stack
 - b) Queue
 - c) Linked list
 - d) None of the mentioned
- 8 The number of edges from the root to the node is called _____ of the tree.
 - a) Height
 - b) Depth
 - c) Length
 - d) None of the mentioned
- 9 What is a full binary tree?
 - a) Each node has exactly zero or two children
 - b) Each node has exactly two children
 - c) All the leaves are at the same level
 - d) Each node has exactly one or two children
- 10 Which of the following sorting algorithm is best suited if the elements are already sorted
 - a) Heap Sort
 - b) Quick Sort
 - c) Insertion Sort
 - d) Merge Sort
- 11 Insertion sort is an example of an incremental algorithm
 - a) True
 - b) False
- 12 What is the advantage of recursive approach than an iterative approach?
 - a) Consumes less memory
 - b) Less code and easy to implement
 - c) Consumes more memory
 - d) All of the mentioned
- 13 Array is a Data structures of type
 - a)Linear
 - b)non Linear
 - c)Both a & b
 - d)none of above
- 14 Extra memory is required to store
 - a)Array
 - b)Link List
 - c)Both a & b
 - d)none of above

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
1	Discuss Advantages and disadvantages of pointers	7
2	Discuss Structure declaration and Member accessing using pointer	7
Q-3	Attempt all questions	(14)
1	Write an note on Dynamic allocation and de-allocation of memory	7



2	Write a note on function malloc, function calloc with example	7
Q-4	Attempt all questions	(14)
1	Discuss Space complexity and Time complexity With example	7
2	Write a note on Big-O Notation, Big-Omega notation	7
Q-5	Attempt all questions	(14)
1	Write a note on Linear search with suitable example	7
2	Discuss with example Bubble sort	7
Q-6	Attempt all questions	(14)
1	Write a note on Primitive and Non Primitive data structures	7
2	Discuss Operations on stack with example	7
Q-7	Attempt all questions	(14)
1	Discuss Circular queue with array implementation	7
2	Discuss Insertion of a node at the beginning of Singly link list with example	7
Q-8	Attempt all questions	(14)
1	Write a note on Post order traversal, Preorder traversal of Tree with example	7
2	Discuss Applications of the linked lists	7

