S.B. Roll No…….

DATA STRUCTURE USING C

4th Exam/Comp/IT/CSE/0622/Nov'18

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **10x1.5=15**

a. What is stack Overflow?
b. Array is a _____ Data structure.
c. A binary tree can have at most _____ children
d. In stack elements can push and pop through _____only
e. Queue follow the property of LIFO (T/F)
f. A node is Divided into two parts first is _____ and 2nd is _____.
g. Tree is _____ data structure
h. Time Complexity of Binary search is $O(\log_2 n)$.True/False
i. Big Oh notation describes the _____of an algorithm.
j. An algorithm is sequence of _____to complete a task.

SECTION-B

Q2. Attempt any five questions. **5x6=30**

i. Define Data structure. Explain types of Data Structure .
ii. Write Binary search algorithm and explain briefly?
iii. Define postfix evaluation algorithm with following infix expression.
((A+2)*(B+7))-3, (convert this into postfix first).You may take any positive value for A and B.
iv. What is Linked list? Write an algorithm to insert an element at any location in linked list.
v. Explain bottom up and top down programming methodologies.
vi. Explain one application of each stack and queue.
vii. What are the drawbacks of linked list and how we can overcome them?
viii. Write algorithms to push and pop an element through stack.

SECTION-C

Q3. Attempt any two questions. **2x15=30**

a. Write an algorithm to convert infix notation to postfix Notation.
b. Write a note on any three
   i. Binary Tree
   ii. De-queue
   iii. Recursion.
   iv. Memory representation of an array
c. What do you understand by Binary tree traversal? Explain various traversal techniques with suitable example.
d. Write an algorithm to traverse a linked list and also to search a node in linked list.

S.B. Roll No.....

DATA STRUCTURE USING C

4th Exam/Comp/IT/CSE/0622/May'18

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **10x1.5=15**

a. A queue data structure has FIFO property. (T/F)
b. An array is a collection of _____data items.
c. FIFO stands for _____.
d. _____search divides the list in two parts.
e. Binary search is applied to sorted list of elements. (T/F)
f. Two ways linked list can be traversed in both directions. (T/F)
g. BST stands for _____.
h. The tree is a Non Linear data structure. (T/F)
i. In _____ a function call itself.
j. Two nodes are called _____if they have same parents.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. What do you mean by Linked List? Explain.
ii. Explain the difference between Linear and Non Linear data structure?
iii. What does FRONT and REAR signifies in queue?
iv. What do you mean be Data Type? Explain.
v. What do you mean by Call by Value and Call by Reference? Explain with example.
vi. Write an algorithm to delete an element from an array?
vii. What do you mean by Stack?
viii. Explain the concept of Recursion with suitable example?

SECTION-C

Q3. Attempt any two questions. **2x15=30**

a. Define array. How do you perform traversing, insertion, deletion, searching in array?
b. Write a short note on **(any two)**
    i. Bubble Sort.
    ii. Circular Queue
    iii. Top down Approach
c. Write a program in C to implement binary Search. Also explain it with suitable example.

S.B. Roll No……..

DATA STRUCTURE USING C

4th Exam/Comp/IT/CSE/0622/May'19

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Fill in the blanks. **10x1.5=15**

a. The logical and mathematical model of a particular organization of data is called _____.
b. _____, _____, and _____are the examples of linear data structure.
c. _____is an example of non-linear data structure.
d. LIFO stands for_____.
e. FIFO stands for_____.
f. Stack is also known as_____.
g. BST stands for _____.
h. In a linked list, linear order is given by_____.
i. _____is known as first node of tree.
j. Node with no children is called_____.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. What do you mean by Array?
ii. Explain the difference between Linear and Non Linear data structure?
iii. What does FRONT and REAR signifies in queue?
iv. What do you mean be Data Structure? Explain.
v. What do you mean by Call by Value and Call by Reference? Explain with example.
vi. Explain the concept of Binary Search with example?
vii. What do you mean by Queue?
viii. Explain the concept of Recursion with suitable example?

SECTION-C

Q3. Attempt any two questions. **2x15=30**

a. What do you mean by Linked List? Explain various operations associated with the linked list.
b. Write a short note on the following.
    i. Bubble Sort
    ii. Stack
    iii. Binary Tree
c. Write a program in C to sort the elements of given array.

S.B. Roll No……..

DATA STRUCTURE USING C

4th Exam/Comp/IT/CS/0622/Sep'2020

Duration: 1.15 Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

a. Explain Top down and bottom up approaches
b. Write linear search algorithm and explain its worst case complexity?
c. Write algorithm for evaluating a postfix expression. Explain with suitable example.
d. What is Linked list? What are the differences in single and doubly linked list?
e. Convert the following infix expression into postfix expression
K+L-(M*N) +O ^P*W+Q.
f. Describe any one applications of queue in detail.
g. Which data structure is used to perform recursion? Why?
h. How binary tree is different from binary search tree? Write a post order traversal algorithm for binary tree.

SECTION-B

Q2. Attempt any one question. **1x10=10**

i. Write an algorithm to insert a node at any position in a linked List and to traverse the entire list
ii. Write an algorithm to convert infix notation to postfix Notation.
iii. Write a note on any two of the following:
a) Time Complexity b) De-queue c) Recursion. d) System Software
iv. What do you understand by Binary tree traversal? Explain various traversal techniques with a suitable example.

S. B. Roll. No.....

DATA STRUCTURES USING C

4th Exam/Comp/CSE/IT/0622/Jun'2021

Duration: 1.15Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

i. Differentiate between stack and Queue.
ii. What is a recursive Function? Explain with example.
iii. Write down algorith for insertion of element in an array?
iv. Define Sorting and also explain with example Bubble sort method for array..
v. What is doubly linked list? And how tio perform operation of insertion in doubly linked list?
vi. Write algorithm for PUSH and POP operations.
vii. What is Header Linked List and Circular queue?

SECTION-B

Q2. Attempt any one question. **1x10=10**

a. What is Stack? Why it is known as LIFO? Write algorithm of PUSH, POP operation on Stack.
b. Explain Binary search method with example also write algorithm for binary search.
c. Explain various methods of tree traversal with algorithms l.
d. What are the various types Arrays? Elaborate.

S. B. Roll. No.....

DATA STRUCTURE
4th Exam/CSE/IT/2095/Jun'2021
(For 2018 Batch Onwards)

Duration: 1.15Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

i. Write the algorithm to insert a new element in array.
ii. What do you mean by multidimensional array?
iii. Define Queue data structure?
iv. What is the difference between static variable and dynamic variable?
v. Write short note on a) Tree b) Binary Tree c)Binary Search Tree
vi. What do you mean by sorting? Explain with example.
vii. What is difference between linear and non linear data structure.

SECTION-B

Q2. Attempt any one question. **1x10=10**

a. What is an array? Explain various operations associated with it.
b. Explain the concept of bubble sort with suitable example and algorithm.
c. What do you understand by stack? Discuss its applications.
d. Define Data Structure. What is difference between Linear data structure and Non linear data structure