

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name: Data and File Structures

Subject Code: 2TE04DFS1 Branch: COMPUTER ENGINEERING

Semester : 04 Date : 18/04/2019 Time: 2:30 PM To 5:30 PM 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. A stack works in _____ manner.
a) LIFO b) FIFO c) FILO d) LOFI
2. Step wise solution of a problem is known as _____.
a) Program b) Flow Chart c) Function d) Algorithm
3. The insertion operation in the stack is called _____.
a) PUSH b) POP c) PEEP d) TOP
4. _____ is a Non-Linear data-structure.
a) Stack b) Tree c) String d) List
5. Another name of dequeue is _____.
a) Double Ended Queue b) Divided Queue
c) Design Queue d) Data Queue
6. The time complexity of quick sort is _____.
a) $O(n)$ b) $O(\log n)$ c) $O(n^2)$ d) $O(n \log n)$
7. In a circularly linked list organization, insertion of a record involves the modification of
a) No Pointers b) 1 Pointer c) 2 Pointers d) 3 Pointers
8. The largest element of an array index is called its
a) Lower Bound b) Upper Bound c) Range d) All of the above
9. The situation when in a linked list $START=NULL$ is
a) Underflow b) Overflow c) Houseful d) Saturated
10. _____ is an array of characters.
a) Structure b) Linked List c) String d) Graph
11. Binary search can be applied only to sorted lists.
a) True b) False
12. Which among the following is a linear data structure?
a) Graph b) Tree c) Queue d) All of the above
13. Linked List is _____ type of Data Structure.
a) Linear. b) Non Linear. c) Both A and B. d) None of the Above.



14. What will be the postfix expression for following infix expression

$A * B + C / D$

a) $AB*CD+ /$ b) $A*BCD / +$ c) $AB*CD / +$ d) $ABC*D / +$

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

Q-2

Attempt all questions

- a) Explain in brief: Primitive and Non-primitive data structure (07)
b) Explain stack and write algorithms of PUSH and POP operations. (07)

Q-3

Attempt all questions

- a) What is queue? Write an algorithm for delete operation in queue. (07)
b) What is array? Write an algorithm to insert element in array. (07)

Q-4

Attempt all questions

- a) Write an algorithm of Binary Search.. (07)
b) Give tracing of following list of numbers using Bubble sort. (07)
23,32,47,11, 65,99,57,84

Q-5

Attempt all questions

- a) Write a program to check if the given string is palindrome or not. (07)
b) Explain different Hashing Methods. (07)

Q-6

Attempt all questions

- a) Define linked List. Write an algorithm to delete a node in doubly linked list (07)
b) Explain Graph Traversal Methods (BFS & DFS) (07)

Q-7

Attempt all questions

- a) What is Tree traversal? Explain different types of tree traversal with example. (07)
b) Write an algorithm for insert a node at the end of the singly link list. (07)

Q-8

Attempt all questions

- a) Explain recursion with example. (05)
b) Convert following expression into the postfix notation: (05)
(i) $a + b / (c * d) - e$ (ii) $(a / b) * (c / (d + e) - f)$
c) Define following (04)
1. Queue
2. Graph
3. Binary Tree
4. Directed Graph



- É. STACK _____ manner માં કામ કરે છે.
a) LIFO b) FIFO c) FILO d) LOFI
- É. કોઈ પણ પ્રોબલમ ના સ્ટેપવાઈસ સોલ્યુશન ને _____ કહે છે.
a) Program b) Flow Chart c) Function d) Algorithm
- É. Stack માં ડેટા ઈનશર્ટ કરવા માટેના ઓપરેશન ને _____ કહેવામાં આવે છે.
a) PUSH b) POP c) PEEP d) TOP
- Ì. _____ એ નોન લીનીયર ડેટા સ્ટ્રક્ચર છે.
a) Stack b) Tree c) String d) List
- Í. Dequeue ને _____ પણ કહેવામાં આવે છે.
a) Double Ended Queue b) Divided Queue
c) Design Queue d) Data Queue
- Î. Quick Sort ની ટાઈમ કોમ્પ્લેક્સિટી _____ છે
a) O(n) b) O(Log n) c) O(n²) d) O(n log n)
- Ï. સરક્યુલર લીંક લીસ્ટમાં ડેટા ઈનશર્ટ કરતી વખતે કેટલા પોઈન્ટર ને બદલવા પડે છે?
a) No Pointers b) 1 Pointer c) 2 Pointers d) 3 Pointers
- Đ. એરે ઈન્ડેક્સ ના છેલ્લા એલીમેન્ટ ને _____ કહેવામાં આવે છે.
a) Lower Bound b) Upper Bound c) Range d) All of the above
- Ñ. જ્યારે લીંક લીસ્ટ માટે START=NULL હોય ત્યારે તે પરીસ્થિતી ને _____ કહેવામાં આવે છે.
a) Underflow b) Overflow c) Houseful d) Saturated
- ÉÉ. _____ ને characters નો એરે કહેવામાં આવે છે
a) Structure b) Linked List c) String d) Graph
- ÉÉ. Binary search ક્રમમાં ગોઠવાયેલા લીસ્ટ માટેજ વાપરી શકાય છે.
a) True b) False
- ÉÉ. નીચે આપેલા પ્રકારોમાંથી કયો પ્રકાર linear data structure નો પ્રકાર છે?
a) Graph b) Tree c) Queue d) All of the above
- ÉÉ. લીંક લીસ્ટ _____ પ્રકાર નો ડેટા સ્ટ્રક્ચર છે.
a) Linear. b) Non Linear. c) Both A and B. d) None of the Above.



1. Queue
2. Graph
3. Binary Tree
4. Directed Graph

