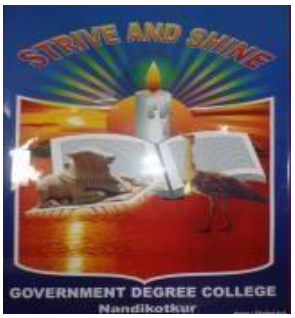

GOVERNMENT DEGREE COLLEGE
NANDIKOTKUR, KURNOOL-DIST.

SUBJECT: DATA STRUCTURES USING C

QUESTION BANK

I YEAR B.Sc (MPCs)-II SEMESTER

Smt.T.JHANSI RANI, LECTURER

DEPARTMENT OF COMPUTER SCIENCE

MULTIPLE CHOICE QUESTIONS

1. Minimum number of fields in each node of a doubly linked list is ___

(A) 2

(B) 3

(C) 4

(D) None of the above

2. A graph in which all vertices have equal degree is known as ___

(A) Complete graph

(B) Regular graph

(C) Multi graph

(D) Simple graph

Complete graph

3. A vertex of in-degree zero in a directed graph is called a/an

(A) Root vertex

(B) Isolated vertex

(C) Sink

(D) Articulation point

4. A graph is a tree if and only if graph is

(A) Directed graph

(B) Contains no cycles

(C) Planar

(D) Completely connected

5. The elements of a linked list are stored

(A) In a structure

(B) In an array

(C) Anywhere the computer has space for them

(D) In contiguous memory locations

6. A parentheses checker program would be best implemented using

(A) List

(B) Queue

(C) Stack

(D) Any of the above

7. To perform level-order traversal on a binary tree, which of the following data structure will be required?

(A) Hash table

(B) Queue

(C) Binary search tree

(D) Stack

8. Which of the following data structure is required to convert arithmetic expression in infix to its equivalent postfix notation?

(A) Queue

(B) Linked list

(C) Binary search tree

(D) None of above

9. A binary tree in which all its levels except the last, have maximum numbers of nodes, and all the nodes in the last level have only onechild it will be its left child. Name the tree.

(A) Threaded tree

(B) Complete binary tree

(C) M-way search tree

(D) Full binary tree

10. Which of following data structure is more appropriate for implementing quick sort iteratively?

(A) Deque

(B) Queue

(C) Stack

(D) Priority queue

FILL IN THE BLANKS

1. If two trees have same structure and node content, then they are called ___
2. Finding the location of a given item in a collection of items is called ……
3. Quick sort is also known as …….
4. ……. sorting is good to use when alphabetizing a large list of names.
5. ……. form of access is used to add and remove nodes from a queue.
6. New nodes are added to the …… of the queue.
7. The time complexity of quick sort is ……..
8. The term push and pop is related to _____
9. The operation of processing each element in the list is known as ……
10. The situation when in a linked list START=NULL is ….

UNIT-I

Introduction to Data Structures:

1) Explain about Abstract data types?

2) Difference between data types and data structures?

3) Explain about algorithm and algorithm analysis?

4) Explain about Big O notation and recursion?

5) Explain about Structured approach to programming?

UNIT-II

Arrays & Linked Lists

6) Explain about linear and non-linear data structures?

7) Explain about different types of arrays?

8) Explain about Dynamic memory allocation?

9) Explain about pointers Vs Arrays?

10) What is linked list? Explain about types of linked lists?

UNIT-III

Stacks & Queues

11) What is stack? Explain about representation of stacks?

12) What is queue? Explain about representation of queues?

13) Explain about priority queue?

14) Explain about applications of stacks and queues?

15) Explain about circular queue?

UNIT-IV

Binary Trees

16) Explain about binary tree (definition, properties, representation, Applications)?

17) Explain about binary tree traversal?

18) Explain about types of trees?

19) Explain about operations on a binary search tree?

UNIT-V

Searching and sorting

20) Explain about selection sort and insertion sort?

21) Explain about Merge sort and quick sort?

22) Explain about linear and binary search?

23) Explain about sequential, linked representation of graphs?

24) Explain about traversals of graphs and graph applications?

25) Explain about shortest path?