

Q.19 What is a binary tree? Name various operations defined for it.

Q.20 Explain different types of queues.

Q.21 Define the terms:

- a) Heap
- b) Data structure
- c) Pointer
- d) Global variables

Q.22 Give differences between variable and constant.

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 What are different types of Arrays? Explain how elements of arrays are stored in memory.

Q.24 Write short note on:

- a) Structured Programming
- b) Bubble sort

Q.25 List various Searching Techniques. Write the algorithm of any one.

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#### 4th Semester/Computer, Computer (For Speech & Hearing Impaired ) Subject: Data Structures using C

Time : 3 Hrs.

M.M. : 60

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 An array is a collection of \_\_\_\_\_ elements.

- a) Homogeneous
- b) Heterogeneous
- c) Dissimilar
- d) None of these

Q.2 Which of the following is the process of inserting an element in the stack?

- a) Insert
- b) Add
- c) Push
- d) None of the above

Q.3 Which of the following principle does Queue use?

- a) LIFO Principle
- b) FIFO principle
- c) Linear tree
- d) Ordered array

Q.4 Which of the following data structures is used in recursion?

- a) Stack                                      b) Queue
- c) Linked List                                d) Trees

Q.5 Which operations can be performed on a linked list?

- a) Creation of a linked list
- b) Traversing a linked list
- c) Insertion of a node in a linked list
- d) All of the above

Q.6 \_\_\_\_\_ is a pile in which items are added at one end and removed from the other

- a) Stack                                      b) Queue
- c) List                                        d) None of the above

### SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 A linear data structure in which insertion and deletion operations can be performed from both the ends is \_\_\_\_\_.

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Q.8 The identifier whose value changes during execution of program is called \_\_\_\_\_.

Q.9 Variable that stores address of another variable is \_\_\_\_\_.

Q.10 When the function calls itself it is called \_\_\_\_\_.

Q.11 Deletion operation in a stack is called \_\_\_\_\_.

Q.12 The full form of FIFO is \_\_\_\_\_.

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 What are the different types of Data Structures? Explain.

Q.14 Define searching. How linear search is different from binary search?

Q.15 Write down an algorithm to delete an item from a linear array.

Q.16 Give difference between sequential search and binary search.

Q.17 Define Array. Give algorithm for traversing an array.

Q.18 Give any four differences between an Array and a Linked List.

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